AUG 5 1986

Y4.Ap6/1:D36/5/1987/pt.4

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1987

ORIGINAL

953

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF DEFENSE

JOSEPH P. ADDABBO, New York, *Chairman* [1]

BILL CHAPPELL, Jr., Florida [2]
JOHN P. MURTHA, Pennsylvania
NORMAN D. DICKS, Washington
CHARLES WILSON, Texas
W. G. (BILL) HEFNER, North Carolina
LES AuCOIN, Oregon

JOSEPH M. McDADE, Pennsylvania
C. W. BILL YOUNG, Florida
CLARENCE E. MILLER, Ohio
BOB LIVINGSTON, Louisiana

[1] Deceased April 10, 1986.

[2] Acting Chairman, April 15, 1986; Chairman, May 7, 1986.

DONALD E. RICHBOURG, J. DAVID WILLSON, JOHN G. PLASHAL, ROBERT V. DAVIS, ROBERT A. SERAPHIN, PAUL J. MAGLIOCCHETTI, M. BRUCE MEREDITH, GEORGE H. SCHAFER, SANDRA A. GILBERT, DAVID F. KILIAN, ELIZABETH A. PHILLIPS, RICHARD E. EFFORD, and DELACROIX DAVIS III, *Staff Assistants;* MARCIA L. MATTS, DONA L. PATE, and ALICIA JONES, *Administrative Aides*

PART 4

Navy Procurement:

Page

Aircraft 1
Weapons and Other 61
Marine Corps Procurement 233
Navy Shipbuilding and Ship Repair Programs 279
Anti-Submarine Warfare Programs 421
Submarine Nuclear Reactor Program 437
Management of Automatic Data Processing (ADP) Programs 465

Printed for the use of the Committee on Appropriations

CDD

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1987

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF DEFENSE

JOSEPH P. ADDABBO, New York, *Chairman*[1]

BILL CHAPPELL, Jr., Florida[2]
JOHN P. MURTHA, Pennsylvania
NORMAN D. DICKS, Washington
CHARLES WILSON, Texas
W. G. (BILL) HEFNER, North Carolina
LES AuCOIN, Oregon

JOSEPH M. McDADE, Pennsylvania
C. W. BILL YOUNG, Florida
CLARENCE E. MILLER, Ohio
BOB LIVINGSTON, Louisiana

[1] Deceased April 10, 1986.

[2] Acting Chairman, April 15, 1986; Chairman, May 7, 1986.

DONALD E. RICHBOURG, J. DAVID WILLSON, JOHN G. PLASHAL, ROBERT V. DAVIS, ROBERT A. SERAPHIN, PAUL J. MAGLIOCCHETTI, M. BRUCE MEREDITH, GEORGE H. SCHAFER, SANDRA A. GILBERT, DAVID F. KILIAN, ELIZABETH A. PHILLIPS, RICHARD E. EFFORD, and DELACROIX DAVIS III, *Staff Assistants*; MARCIA L. MATTS, DONA L. PATE, and ALICIA JONES, *Administrative Aides*

PART 4

Page

Navy Procurement:
- **Aircraft** **1**
- **Weapons and Other** **61**

Marine Corps Procurement **233**
Navy Shipbuilding and Ship Repair Programs **279**
Anti-Submarine Warfare Programs **421**
Submarine Nuclear Reactor Program **437**
Management of Automatic Data Processing (ADP) Programs **465**

Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE
56-684 O WASHINGTON : 1986

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

I

COMMITTEE ON APPROPRIATIONS

JAMIE L. WHITTEN, Mississippi, *Chairman*

EDWARD P. BOLAND, Massachusetts
WILLIAM H. NATCHER, Kentucky
NEAL SMITH, Iowa
*JOSEPH P. ADDABBO, New York
SIDNEY R. YATES, Illinois
DAVID R. OBEY, Wisconsin
EDWARD R. ROYBAL, California
LOUIS STOKES, Ohio
TOM BEVILL, Alabama
BILL CHAPPELL, Jr., Florida
BILL ALEXANDER, Arkansas
JOHN P. MURTHA, Pennsylvania
BOB TRAXLER, Michigan
JOSEPH D. EARLY, Massachusetts
CHARLES WILSON, Texas
LINDY (MRS. HALE) BOGGS, Louisiana
NORMAN D. DICKS, Washington
MATTHEW F. McHUGH, New York
WILLIAM LEHMAN, Florida
MARTIN OLAV SABO, Minnesota
JULIAN C. DIXON, California
VIC FAZIO, California
W. G. (BILL) HEFNER, North Carolina
LES AuCOIN, Oregon
DANIEL K. AKAKA, Hawaii
WES WATKINS, Oklahoma
WILLIAM H. GRAY III, Pennsylvania
BERNARD J. DWYER, New Jersey
BILL BONER, Tennessee
STENY H. HOYER, Maryland
BOB CARR, Michigan
ROBERT J. MRAZEK, New York
RICHARD J. DURBIN, Illinois
RONALD D. COLEMAN, Texas

SILVIO O. CONTE, Massachusetts
JOSEPH M. McDADE, Pennsylvania
JOHN T. MYERS, Indiana
CLARENCE E. MILLER, Ohio
LAWRENCE COUGHLIN, Pennsylvania
C. W. BILL YOUNG, Florida
JACK F. KEMP, New York
RALPH REGULA, Ohio
GEORGE M. O'BRIEN, Illinois
VIRGINIA SMITH, Nebraska
ELDON RUDD, Arizona
CARL D. PURSELL, Michigan
MICKEY EDWARDS, Oklahoma
BOB LIVINGSTON, Louisiana
BILL GREEN, New York
TOM LOEFFLER, Texas
JERRY LEWIS, California
JOHN EDWARD PORTER, Illinois
HAROLD ROGERS, Kentucky
JOE SKEEN, New Mexico
FRANK R. WOLF, Virginia
BILL LOWERY, California

FREDERICK G. MOHRMAN, *Clerk and Staff Director*

---

*Deceased April 10, 1986.

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1987

WEDNESDAY, MARCH 12, 1986.

AIRCRAFT PROCUREMENT, NAVY

WITNESSES

VICE ADMIRAL E.H. MARTIN, U.S. NAVY, DEPUTY CHIEF OF NAVAL OPERATIONS FOR AIR WARFARE
LIEUTENANT GENERAL K.A. SMITH, U.S. MARINE CORPS, DEPUTY CHIEF OF STAFF FOR AVIATION, HEADQUARTERS, U.S. MARINE CORPS
VICE ADMIRAL J.B. WILKINSON, U.S. NAVY, COMMANDER, NAVAL AIR SYSTEMS COMMAND
REAR ADMIRAL STANLEY R. ARTHUR, U.S. NAVY DIRECTOR, AVIATION PLANS AND REQUIREMENTS DIVISION
REAR ADMIRAL WILLIAM D. SMITH, U.S. NAVY, DIRECTOR, OFFICE OF BUDGET AND REPORTS
COLONEL H.W. BLOT, U.S. MARINE CORPS, PROGRAM MANAGER FOR V-22
MS. H.S. HUGHES, DEPUTY DIRECTOR, AVIATION PLANS
CAPTAIN B.C. MARSHALL, PROGRAM MANAGER FOR T-45TS
CAPTAIN R.R. BUEHLER, PROGRAM MANAGER FOR A-6/EA-6

INTRODUCTION

Mr. CHAPPELL. The committee will please come to order.

This afternoon the committee will hold hearings on the Navy's fiscal year 1987 aircraft procurement budget request which amounts to $11.3 billion and represents an increase of 6 percent over last year's appropriation after adjusting for Gramm-Rudman.

Today the committee will discuss your overall request along with a number of issues including: V-22; F-14/A-6 Upgrade; SH-60B LAMPS MARK III; and the F-18 and CH-53E multiyear procurement.

We welcome Admiral Martin, Admiral Wilkinson, and General Smith.

Admiral Wilkinson, since this is your first appearance before the committee, your biography will be placed into the record.

[The biographies of Admiral Wilkinson and Admiral Arthur follow:]

VICE ADMIRAL JOSEPH B. WILKINSON, USN

Admiral Wilkinson graduated from the Naval Academy in June 1952. He holds a Bachelor of Science Degree from the Naval Postgraduate School and Master of Science Degrees in Aeronautics and Astronautics from the Massachusetts Institute of Technology and in International Relations from The George Washington University.

After a year aboard a heavy cruiser, he entered flight training and received his wings on October 1954. He later served in two A-1 Skyraider squadrons, Fighter Squadron NINETY-TWO at Naval Air Station, Miramar and Attack Squadron NINETY-SIX at Naval Air Station, Moffett Field, with Western Pacific deployments on USS SHANGRI LA and USS KEARSARGE. From 1961 to 1964 he served with Attack Squadron SEVENTY-TWO, flying A-4 Skyhawks at Naval Air Station, Oceana and embarked on USS INDEPENDENCE. He later served as Executive Officer of Attack Squadron NINETY-FOUR, with combat deployments in Southeast Asia aboard USS HANCOCK and USS BON HOMME RICHARD in 1967 and 1968.

Shore assignments include duty on the staff of Commander, Operational Test and Evaluation Force in 1964 and 1965, attending the Armed Forces Staff College in 1966, the National War College in 1971, and as Assistant Chief of Staff for Plans and Programs for the Chief of Naval Education and Training from 1976 to 1978.

He became involved in material acquisition in 1968 when assigned to the Naval Air Systems Command as the Navy Deputy Project Manager, F-14B/F-15 Joint Engine Project, Wright-Patterson Air Force Base. In August 1972 he became the Naval Air Systems Command Project Manager for the A-6 and EA-6 aircraft programs and served in that capacity for four years.

He served as Deputy Chief of Naval Education and Training, then returned to Washington as Deputy Commander for Plans and Programs in the Naval Air System Command Headquarters. In September 1982 he assumed command of the Pacific Missile Test Center, Point Mugu, California. On his return to Washington in August 1984 he began service as Vice Commander, Naval Air Systems Command, and was selected for Vice Admiral in August 1985.

Vice Admiral Wilkinson assumed his current position as Commander, Naval Air Systems Command in August 1985.

Awards include the Legion of Merit, the Distinguished Flying Cross, and Bronze Star, 27 Air Medals, and three Naval Commendation Medals.

REAR ADMIRAL STANLEY R. ARTHUR

Rear Admiral Stanley R. Arthur was born in San Diego, California, on 27 September, 1935. He entered the U.S. Navy through the Navy Reserve Officer Training Corps Program at Miami University and was commissioned in June 1957, with orders to report to Pensacola, Florida, for flight training.

Designated a Naval Aviator in 1958, he reported to VS-21 at NAS North Island; and, in 1960, he became a "Plank Owner" in VS-29, deploying in USS KEARSARGE with both squadrons. Assigned to the U.S. Naval Postgraduate School in 1962, he was awarded a Bachelor of Science Degree in Aeronautical Engineering in 1964. His next tour of duty was with VX-1 at Key West, Florida, as Weapons Project Officer. He reported aboard USS BENNINGTON for duty as Assistant Navigator in 1966. In 1967, after jet transition training, he reported to VA-55 and made two combat cruises aboard USS HANCOCK. After this tour, he reported to VA-122 as an A-7 Instructor Pilot and Maintenance Officer. Additionally, he became the first Officer in Charge of COMFAIRLEMOORE Weapons Training Center.

In July 1971, Commander Arthur reported to VA-164 as Executive Officer and assumed command a year later while deployed in USS HANCOCK. During this tour, he completed over 500 combat missions in the A-4 Skyhawk. In August 1973, he reported to the Industrial College of the Armed Forces. While there, he also attended George Washington University and obtained his Master of Science Degree in Administration. Upon completion, he reported to the Bureau of Naval Personnel, where he served as Head of the Aviation Lieutenant Commander and Junior Officer Assignment Branch. He reported aboard USS SAN JOSE as Commanding Officer in July 1976 and to CNO's Senior Officer Ship Material Readiness Course, Idaho Falls in January 1978. Captain Arthur assumed command of USS CORAL SEA in June 1978.

In January 1980, Captain Arthur joined the Staff of the Commander in Chief U.S. Pacific Fleet, Pearl Harbor, for duty as the Fleet Operations Officer and Assistant Chief of Staff for Operations. He was selected for Rear Admiral during this tour and, in July 1981, was assigned as Assistant Chief of Staff for Plans and Policy with additional duty to the Commander Rapid Deployment Naval Forces. In January 1983, the U.S. Naval Forces Central Command was established with Rear Admiral Arthur as its first Commander. Rear Admiral Arthur assumed command of Carrier Group SEVEN on board USS RANGER (CV-61) in July 1983 and was in command of Battle Group ECHO while deployed to the Western Pacific and Indian Oceans from July 1983 through February 1984. In August 1984, Rear Admiral Arthur embarked in USS KITTY HAWK (CV-63) in preparation for the upcoming deployment of Battle Group BRAVO to the Northern and Western Pacific.

Rear Admiral Arthur has been awarded the Legion of Merit with Combat "V" and gold star; 11 Distinguished Flying Crosses; the Meritorious Service Medal; four individual Air Medals; 47 Strike-Flight Air Medals; and additional individual, unit, and service awards.

Rear Admiral Arthur is married to the former Jennie Lou Mapes of Jackson, Ohio. They have four children: Erin, Brian, Derek and Brad.

Mr. Chappell. This afternoon's hearing will be closed by a motion duly made and passed in open session in order that we may discuss any classified material.

Gentlemen, in the interest of time, your entire statements will be made part of the record at this point, and I would ask you to summarize if I could, which will give us a chance to come more quickly to some of the issues we would like to get to.

You may proceed.

[The statements of General Smith and Admiral Martin follow:]

Prepared Statement of Vice Admiral Edward H. Martin
Deputy Chief of Naval Operations (Air Warfare)

Mr. Chairman and distinguished members of the Committee, it is a privilege to present the Navy's fiscal year 1987 aircraft procurement request. In my brief discussion, I intend to describe how this budget request supports our maritime strategy and the fundamental pillars of effectiveness so necessary to this strategy--readiness, sustainability, modernization and force structure. In doing so, I will emphasize some of my concerns, such as the age of our aircraft force, and point out some of the successes of the past year. In addition, I will provide a summary description of each aircraft in the procurement request.

The Navy is proceeding well toward a force structure of 600 ships. In the proper mix and degree of technological sophistication this force will be capable of meeting projected threats into the next century. Ships alone cannot prevail in time of crisis or conflict; they must be well manned and equipped with modern weapons systems capable of meeting and countering the increasingly sophisticated threats.

The basic foundation of our modern 600-ship Navy is the carrier battle group; and the centerpiece of the carrier battle group is the enormously powerful and versatile aircraft carrier with her embarked airwing. It is the aircraft and their associated weapons systems that can take the fight to the enemy. They are the cutting edge of our deterrence posture and maritime strategy, supported of course by many associated systems.

A principal concern is to ensure that we structure our aircraft procurement programs in a balanced fashion, within the limits of affordability in order to keep this cutting edge sharp, effective and with the ability to sustain across the spectrum of potential threats. These threats range from terrorist activity to limited crises to global conflict.

During the past twelve months, we have worked diligently to put together a plan combining all of the elements of our aviation program--the aircraft, weapons, support equipment, spares and training systems---into a viable and affordable procurement request necessary to meet our fundamental requirements. We have recognized the tight fiscal environment which exists and are acutely aware of our responsibility to be good stewards of the taxpayer's dollars. Every effort has been made to reduce costs while maintaining our requisite capabilities. The result is an aircraft procurement, Navy (APN) request for FY-87 which shows a negative growth of minus 2.3 percent when compared to the FY-86 appropriation.

This negative growth is absorbed in all elements of the naval aviation programs and all four of the established pillars of force effectiveness--readiness, sustainability, modernization and force levels. In this tight fiscal environment, we are managing all of our resources with utmost care to ensure that we protect the gains that we have made in the past five years and that we continue toward our force level requirements of 15 deployable carriers, 14 active and two reserve carrier air wings, 24 active and 13 reserve patrol squadrons, and one reserve and three active Marine air wings.

The procurement program that is being presented today requests 271 aircraft, the bulk of which are sea based tactical aircraft necessary to provide the Navy with essential combat capability for our battle groups to meet their worldwide commitments. The realities of a tightly constrained defense budget dictate that we must continue to tighten our belts and be highly innovative in our efforts to derive a strong, balanced program within the limits of affordability. At this time a year ago I had hoped to procure 329 aircraft in FY-87. As a result of budgetary constraints, we have reduced that number by 58. Some very hard decisions have been necessary. Planned procurement levels of trainer and transport aircraft were reduced or deferred with preference given to combat aircraft. We have reduced the number of open production lines and incorporated more economic production rates for the high priority F/A-18, A-6E, and EA-6B programs. This procurement program is built upon a foundation designed to maintain a balance between requirements, available funding and optimal acquisition strategies. Our goal is to continue to ensure that we are able to put to sea a modern and effective force capable of meeting all commitments. It is axiomatic that we be ready for the unexpected and again this has been demonstrated during the intercept of the Achille Lauro highjackers and by the recent operations in the Central Mediterranean in the vicinity of the Gulf of Sidra. U. S. Naval Forces continue to operate at a high tempo around the globe in response to crises and contingencies, while maintaining a strong posture to deter aggression and adventurism.

Readiness

Maintaining the highest state of combat readiness is essential if we are to meet these challenges. I am pleased to report that our readiness today is better than at this time last year. The key indicator of aircraft readiness, our mission capable rate, improved again as we met our FY-85 goal of 70 percent, and we have raised the 1986 goal to 73 percent which I have every reason to believe we will achieve. Our newest addition to the fleet, the F/A-18, is demonstrating significantly improved reliability and maintainability compared to its predecessors. This not only points out that technologically advanced aircraft will be ready to answer the call more often but also that our policy of incorporating maintainability and reliability into our procurement strategy is sound.

Aircraft Age

Unfortunately, we are not reducing the age of our fleet of aircraft and age is a detriment to readiness. Older aircraft are more expensive to maintain and, more importantly to the operational commander, they tend to be less dependable. At the end of the Vietnam War, the average age of our aircraft was 8.3 years; today, the average age of our aircraft has increased to 12.6 years. During the past five years, the aging trend has been checked but not reversed. Currently, two-thirds of our aircraft are over 10 years of age and 40 percent are over 15 years old.

The 271 aircraft procurement program we have outlined in the FY-87 request will result in a continued increase in the age of the total force; however, since the bulk of those requested are tactical aircraft we will be able to maintain the vitality of our front line forces. This tradeoff will require correction in future years as the age of support aircraft increases. A procurement rate of 329 aircraft per year will be necessary to maintain the current age of the force considering prevailing attrition rates. This rate, incidentally, is less than expected, once again reflecting a superb safety record, with an accident rate of only 3.39 per 100,000 flight hours this past calendar year. I am delighted to report this and to assure you that we intend to continue to press for an even better safety record in 1986.

Modernization

To offset the effects of the 12.6 year average age of aircraft, much emphasis is placed upon modernizing existing aircraft through a dynamic aircraft modification program, funded by APN Budget Activity 5. This is necessary when one considers that many aircraft now in the inventory will be in active service beyond the turn of the century. This will require periodic baseline configuration improvements to increase service life, solve in-service safety problems, and updating of capabilities to meet the ever improving threat. Major initiatives this year in the modification program are designed to provide capability, reliability, and maintainability upgrades to the A-6, F-14, and S-3 and SH-2 aircraft. Additional emphasis is directed toward common avionics and common ECM improvements which provide our aircraft with greater reliability in flight equipment and combat survivability.

Aircraft Spares

Among the prime elements of material readiness are aviation spares, aircraft depot rework and support equipment. The S-3 Viking is a prime example of what adequately funded depot level rework and spares can do. This key ASW asset rose from the bottom of the mission capable (MC) readiness records (less than 40% MC) when spares were underfunded to one of the best fully deployed systems (greater than 80% MC) in the fleet once adequate attention was given to spares support---a success story with convincing results. Last April, we commenced the aviation portion of the Navy's test of stock funding by including aviation repairables. Preliminary reports indicate that the results parallel those that were achieved in the non-aviation repairables test. An initial benefit has been an increased number of aviation components repaired, and a consequent increase in our "ready-for-issue" shelf stocks. This increase will provide an early boost to both readiness and sustainability. The parts will be there, in the fleet, whether needed for peacetime operations or wartime mobilization, resulting in significant improvement over our current situation.

Naval Air Reserve

Hand-in-hand with advances in the regular aviation force are initiatives to upgrade the Naval Air Reserve. The reserves represent an integral capability necessary to the total maritime strategy and maintaining modern equipment in the reserve force is essential to ensure a capable and credible force. Our budget request represents a balanced level of funding for both the active and reserve components.

Our progress in this area has been excellent to date. Two reserve fighter squadrons have completed transition to the F-14 aircraft with two remaining squadrons transitioning next year. Delivery of the F/A-18 to the reserves will commence in 1986 allowing two of the six reserve light attack squadrons to transition to the Hornet this year. The transition will parallel the fleet with a goal of making our reserve attack composition a mirror image of the active airwings.

Planned improvements in VP reserve squadrons will provide substantial increases in our reserve ASW capability. The first reserve squadron will transition to P-3C Update III aircraft in FY-88. Upgrading of remaining P-3A/B aircraft with the Tactical Navigation Modification (TACNAVMOD) continues with installations to be completed in all thirteen squadrons by the end of FY-86.

Procurement

We continue to emphasize cost effective procurement for both the qualitative and quantitative improvements to our force (i.e., modernization and force levels). By the application of sound business and contracting techniques and procurement strategies we have had considerable success in bringing down the cost of aviation weapons systems.

This strategy seeks to achieve cost savings through economic production rates, balanced against other requirements, up-front funding for dual source competition, firm fixed price contracts, joint programs, and multi-year procurement contracts. These efforts will, in the long run, provide the aircraft needed to implement the maritime strategy at the lowest cost.

Competition has become an integral part of the corporate approach to acquisition management. An intensive review is made of programs which have traditionally been "sole source." Our goal is to challenge and break down previous barriers to competition and make it easier to compete a program than to go sole source. We are positioning ourselves to sustain growth in competition in the long term. Where possible, programs are designed in the competition sense through development and several production lots. For example, the V-22A Osprey tilt rotor aircraft program has established the planning framework for long term sustainable production competition. This has already resulted in lower costs than previously expected.

Emphasis has been placed on the development of dual sources. There are presently 25 major systems or subsystems that have a second source, or are in the planning stage for dual sourcing. These efforts are paying impressive dividends. Competitively awarded contracts increased from $1.66 billion in FY-84 to $2.51 billion in FY-85 and the percent of awards increased from 16.5 to 21.8 percent. In FY-86, we expect to let approximately $3.5 billion in competitive contracts and achieve a competition percentage greater than 25 percent.

Aggressive action to control the cost of aircraft weapons systems has also been set in motion. We are performing intensive reviews of subcontractor costs, which represent 40 to 60 percent of the total price of a major weapons system. In the past, the primary responsibility for managing the charges by subcontractors was assigned to the prime contractor. When it became apparent that the prime contractors were not placing the proper emphasis on this effort, we took a more aggressive role in the review and approval of subcontracts. Labor rates of both the prime and subcontractors have been closely monitored. Unrealistic increases have been disallowed. Overhead cost reviews of major prime contractors have been conducted to provide a better insight into the legitimate costs associated with overhead. The results of these efforts have been remarkable and we will continue to seek more efficient ways to reduce the costs of weapons systems while ensuring that quality and performance are maintained at levels required to meet fleet readiness needs.

Production Lines

We have taken positive steps to improve production effectiveness and reduce the number of production lines. We are on the schedule that I presented last year and will have 12 production lines open in FY-87. Additionally, we have adopted more efficient production rates for the AV-8B, F/A-18, EA6B, A-6E, and SH-60 helicopters which should result in significant savings over the life of these programs.

Aircraft/major weapons systems listed in our 1987 procurement request are briefly summarized below.

F/A-18 Hornet

The F/A-18 strike fighter continues to display high performance and reliability as it is employed in increasing numbers in both Naval and Marine squadrons. Fully combat-capable, dual-cockpit aircraft are used as training squadron aircraft. Beginning in 1990, the dual-cockpit aircraft will be used in the Marine Tactical Air Control (Airborne) Mission and as Marine reconnaissance aircraft. The F/A-18 strike fighter is a true force multiplier that provides the operational commander with a synergistic effect when using this remarkable aircraft in either the fighter or attack role. The F/A-18 is the nation's first strike-fighter, designed for such traditional strike (attack) applications as interdiction and close air support without compromising fighter (escort and fleet air defense) capabilities. The result is a strike aircraft with excellent fighter and self-defense capabilities that increases strike mission survivability and supplements the F-14 in outer air battle.

The Hornet receives its first major block update under a firm fixed price contract beginning with the FY-86 procurement. This upgrade equips the F/A-18 with provisions for Advanced Medium Range Air-to-Air Missile (AMRAAM), Advanced Self-Protection Jammer (ASPJ), Imaging Infrared (I^2R) Maverick (AGM-65F), and an aircraft maintenance monitoring system. As this is a significant change in aircraft operational capability and logistical support, we have redesignated those FY-86 and subsequent aircraft as F/A-18C, for single-seat aircraft, and F/A-18D for two-seat aircraft. The night attack/austere all-weather development continues this year under a joint AV-8B/F/A-18 fixed-price development contract. The addition of a fixed field-of-view navigational FLIR, together with night-vision goggles, and a color digital map display, will open the night and under-the-weather regime to visual navigation and target attack with virtually the same accuracy as during daylight hours. The two-seat F/A-18D, in addition to these enhancements, will be equipped with decoupled rear cockpits. This will allow the aircrew in the rear cockpit to independently operate sensors and displays.

Beginning in FY-90, a limited number of U.S. Marine Corps F/A-18D's will be equipped with a reconnaissance sensor pallet which will replace the 20mm gun in those aircraft so equipped. These reconnaissance-capable aircraft will be folded into the Marine Corps fighter/attack squadrons.

Fourteen Navy and Marine Corps Hornet squadrons are operating today from 19 bases and two aircraft carriers. Total flight hours exceed 200,000.

One year after initial operational capability of our first strike-fighter squadron, USS CONSTELLATION deployed to the Western Pacific with two Hornet squadrons aboard. During this initial deployment, the F/A-18 demonstrated the very high mission reliability and effectiveness projected for the Hornet. Our second Hornet-equipped aircraft carrier, USS CORAL SEA, with four strike-fighter squadrons embarked, is now on station in the Mediterranean. These squadrons continue to enjoy high availability rates and unprecedented readiness rates.

The Department of the Navy F/A-18 inventory as of January 1986 is 278 with an additional 204 aircraft funded and undelivered. The procurement cost through the budget year is $19,697 million. FY-87 request includes $3,406.7 million for the production of 120 aircraft and advance procurement of 132 aircraft in FY-88 in order to take advantage of a more efficient production rate and further reduce the F/A-18 acquisition cost. This represents an increase of 36 aircraft over last year's request. The recurring flyaway cost of the F/A-18 is $18.7 million.

F-14A Tomcat

The F-14A is our high performance, maritime air superiority fighter. It is a two-place, variable sweep wing, supersonic, carrier-based airborne weapons system. The F-14 has an all-weather capability to deliver Phoenix and Sparrow missiles using the AWG-9 Weapons Control System with the Sidewinder missiles and the M-61 gun for close-in air-to-ait combat. The F-14 is powered by Twin TF30-P-414A engines. Commencing in FY-86, the F-14A(plus) will have a new engine, the General Electric F-110, which will provide major improvements in both safety and performance. A major upgrade of the F-14 aircraft is planned for production incorporation in FY-88 which will enhance the operational capability with improvements in electronic counter-counter measures in the radar, a digital avionics suite, and the improved engine performance and reliability of the F-110.

The F-14A inventory as of January 1986 is 449 with 51 aircraft funded and undelivered. The procurement cost through the budget year is $13,807.4 million. the FY-87 request includes $695.9 million for the production of 15 aircraft and advance procurement for 12 aircraft in FY-88 (5 F-14A(plus) and 7 F-14D). The recurring flyaway cost of the F-14A(plus) is $36.2 million FY-86).

E-2C Hawkeye

The E-2C is an all weather, carrier-based, Airborne Early Warning (AEW) aircraft. It carries a crew of five: pilot, co-pilot, combat information center officer, air control officer and flight technician. The E-2C has a high wing, a 24 foot rotodome, mounted above the fuselage and will be powered (by the end of FY-86 production) with two T56-A-427 turbo-prop engines.

The E-2C extends task force defense perimeters by providing early warning of approaching enemy raids and by vectoring interceptors into attack position. In addition to this function, the Hawkeye also provides strike control, air traffic control, radar surveillance, search and rescue assistance, communications relay, and automatic tactical data exchange.

FY-86 begins the major update of the E-2c's electronics suite. This update will ensure the E-2C's AEW advantage against the threat through the 1990's. The increase in aircraft weight due to these improvements and other structural modifications has brought about the urgent requirement for the upgraded T56-A-427 engine.

The E-2C inventory as of January 1986 is 83 with 13 aircraft funded and undelivered. The procurement cost through the budget year is $3,849.8 million. The fiscal year 1987 request includes $335.3 million for the production of 6 aircraft and advance procurement for 6 aircraft in FY-88. The recurring flyaway cost of the E-2C is $40.3 million.

S-3A Viking

The S-3A Viking is an extremely versatile multi-mission carrier-based aircraft with a primary mission of antisubmarine warfare. Its speed, range, detection capabilities and reliability make it highly effective component of the carrier battle group's ASW force. In such missions as mining, command and control, threat warning, and surface surveillance/identification/classification, it is often the operational commander's first choice.

Although the S-3A is no longer in production, a weapon system improvement program, or WSIP, will retrofit avionics and weapons subsystems to counter the submarine threat of the 1990's. The resultant S-3B will incorporate state-of-the-art technology for increased radar detection range and classification, advanced acoustic processing, increased electronic support measures capability, and integration with the harpoon missile. Current plans call for conversion of 160 S-3A'S to S-3B'S. The FY-87 budget requests $215.4 million in aircraft modification funds to continue the program.

P-3C Orion

The P-3C is our shore-based, long range antisubmarine warfare and maritime surveillance aircraft and has been in production since 1969. The P-3C has enjoyed an evolutionary development of its sensor systems through a series of update programs. The latest improvement is Update III which adds the Proteus advanced signal processor, significantly improving the Orion's ability to detect, track, and attack quieter, new generation Soviet subs. The first Update III P-3C aircraft entered fleet service in May of 1984. We have under development the next major update to the P3C, Update IV, which will further increase our capability to counter the rapid quieting trend observed in Soviet submarines. This modification is scheduled to enter the fleet in the 1990's. We have 24 active P-3 squadrons, 21 of which operate the P3C and three of which fly the P-3B. There are also 13 reserve squadrons which fly P-3A'S and P-3B'S.

The P-3C inventory as of January 1986 is 234 with 18 aircraft funded and undelivered. The procurement cost through the budget year is $5,807.0 million. The FY-87 request includes $431.8 million for the production of nine aircraft and $98.4 million advance procurement for production of nine aircraft in FY-88. The recurring flyaway cost of the P-3C is $34.7 million.

Lamps MK I & II

Two types of light airborne multi-purpose system helicopters are employed on our surface ships to maximize their antisubmarine warfare capability. For those combatants which cannot accommodate the new SH-60B (Lamps MK III), we must continue to provide the SH-2F (Lamps MK I). This system is projected to remain the primary ASW Sensor for over 80 surface combatants through the year 2000 and beyond, therefore, we must significantly upgrade the Lamps MK I SH-2F aircraft to maintain its warfighting capability.

The specific upgrades include T-700 engines, onboard sonobuoy processing capability, 99 channel sonobuoy capability and secure TACNAV (tactical navigation) data link. A report which details our study and conclusions on this subject is being provided to the Senate and House Appropriations Committees. In addition, we are reviewing a Multi-Mission Modular (M^3C) concept of upgrading the SH-2F which can maximize the capabilities of the SH-2F. Modular upgrades in kit form are under investigation to meet MK I ship taskings in ASW, ASUW, Combat SAR and Surveillance.

The SH-60B Seahawk is the air subsystem of the Lamps MK III system scheduled for FFG-7, DD-963, DDG-993, and CG-47 class ships. The total MK III system includes the SH-60B, the ship's electronics, a helicopter landing system, and helicopter support facilities. Lamps MK III is a computer-integrated, ship/helicopter combat system that greatly increases the flexibility, combat range and effectiveness of surface combatants. The SH-60B passes sonobuoy information through an advanced secure data-link to the lamps MK III ship for processing. In addition, the SH-60B has full onboard processing capability. Electronic Support Measures (ESM) data, radar data, and voice communications can also be passed on the data link. 1985 marked the first year in which the Lamps MK III system was fully deployed on four FFG'S. All deployments demonstrated high performance and confirmed the force multiplier projections made for the MK III system.

Both Lamps MK I and MK III systems use homing torpedoes for submarine attack. Additionally, the Penguin anti-ship missile is being procured for the SH-60B. The combined Lamps weapon systems are essential elements of our battle groups, surface action groups and in time of war would play a critical role in convoy escort.

The SH-2F inventory as of January 1986 is 103 with 22 aircraft funded and undelivered. The procurement cost through the budget year is $582.0 million. The fiscal year 1987 request includes $52.8 million for the production of six aircraft. The recurring flyaway cost of the SH-2F is $8.6 million.

The SH-60B inventory as of January 1986 is 50 with 58 aircraft funded and undelivered. The procurement cost through the budget year is $3220.6 million. The fiscal year 1987 request includes $220.8 million for production of 17 aircraft and advance procurement for six aircraft in fiscal year 1988. The recurring flyaway cost of the SH-60B is $12.2 million.

The SH-60F is under development to replace the SH-3H as our Carrier Inner-Zone ASW helicopter. A firm-fixed price contract has been signed with Sikorsky for development of the SH-60F--this contract includes firm-fixed price options for the first five lots of production. Two test and evaluation aircraft are being built and will fly in January 1987. The SH-60F will employ the new AQS-13F active dipping sonar in addition to sonobouys to track and attack submarines. It will use ASW homing torpedoes as its primary weapon. The FY-87 request includes $168.1 million for procurement of seven SH-60F aircraft and advance procurement for 18 SH-60F for FY-88.

AV-8B Harrier

The AV-8B, an improved vectored thrust V/STOL aircraft, based upon the AV-8A concept and utilizing the Pegasus II Engine, has up to twice the range or payload of the older harrier. It combines aerodynamic improvements with an angle rate bombing system for increased weapons delivery accuracy, and it has a new stability augmentation system to reduce pilot workload. The result is a much more capable and reliable aircraft. The AV-8B will meet the Marine Corps requirement for a light attack aircraft to provide responsive offensive air power that can operate from austere forward sites in direct support of ground forces.

The AV-8B inventory as of January 1986 is 43 with 81 funded and undelivered. The procurement cost through the budget year is $[illegible],489.8 million. The FY-87 request includes $700.3 million for the production of 42 aircraft and advance procurement for 42 aircraft in FY-88. The recurring flyaway cost of the AV-8B is $16.6 million.

The AV-8B has been a resounding success, both technically and economically. In 1983, the contract was changed from a cost-plus-incentive to a firm-fixed price. At milestone IIIA, it was stipulated that the program be under a $22 million flyaway cost in 1984. It averaged $18.1 million that year, 20 percent below expectations. By 1985, the flyaway was down to $16.6 million and is expected to average $15.4 million in 1986.

A-6E Intruder

The A-6E is the Navy's only true all-weather, low-level, deep strike/interdiction attack aircraft. It incorporates a solid state weapons release system, a single integrated track and search radar with a moving target indicating system, and an inertial navigation system.

An added capability, Target Recognition Attack Multisensor (TRAM), has been procured since 1976. This major subsystem, procured under a multiyear production contract, includes an infrared sensor, a laser ranger/designator and a laser receiver. TRAM gives the intruder the capability to deliver laser guided weapons and markedly improves its night surveillance and identification capability.

As reported last year, we discovered wing fatigue cracking in some of our A-6E and KA-6D aircraft, causing us to reduce our service life expectations based upon current fleet usage projections.

To correct this problem, we have competed a "new" wing as a form, fit and function replacement for the present A-6 wing, and a contract for a wing with an 8,800-hour service life has been awarded to Boeing Military Airplane Company. This composite structure wing will have more than twice the service life of the present design. Deliveries are scheduled to commence in early FY-88. The wing will be provided as Government Furnished Equipment (GFE) for installation on FY-87 A-6E production aircraft and on new procurement A-6F aircraft. It will be retrofitted, as well, on existing A-6 aircraft. To extend their service lives and correct fatigue discrepancies, commencing in FY-88.

The A-6E inventory as of January 1986 is 343 with 23 aircraft funded and undelivered. The procurement cost through the budget year is $3,500.0 million. The FY-87 request includes $390.1 million for the production of eleven aircraft, and advance procurement for 12 A-6F aircraft in FY-88. The recurring flyaway cost of the A-6E is $23.3 million.

A significantly improved model of the intruder, the A-6F, is now under development with a fixed price research and development contract, and not-to-exceed prices negotiated for the first three production years. Procurement will begin in FY-88. The A-6F represents a major advancement in all-weather-attack technology. It will incorporate a new engine and digital avionics which will further improve reliability, maintainability and performance. Survivability will be enhanced through incorporation of the latest advances in fire and explosion suppression and improved standoff targeting. High resolution radar and an air-to-air capability provide major improvements in weapons system performance.

EA-6B Prowler

The EA-6B is a four-place, twin engine derivative of the A-6 attack aircraft. The aircraft is a fully integrated electronic warfare weapon system that combines long-range, all-weather capability with advanced electronic countermeasures and electronic support measures systems. It can carry up to five jammer pods which house the high power jamming transmitters capable of operating against various threat emitters. The EA-6B, with an in-flight refueling capability, is designed for carrier and/or advanced base operations and is integral to the maritime strategy.

The primary mission of the EA-6B is to support strike aircraft, amphibious operations and provide a counter-targeting capability for battle groups by suppressing and degrading an enemy's electronic systems through tactical jamming. Secondary missions include passive early warning for fleet defense and obtaining tactical electronic intelligence within a combat area. The EA-6B is the only carrier based aircraft which provides these capabilities.

Presently, there is a shortage of the EA-6B Aircraft to meet Navy and Marine Corps force level requirements. In order to alleviate this situation, we have recently increased the procurement of EA-6B'S to 12 per year starting with FY-86 and continuing through the FYDP. This procurement schedule will allow the Navy to increase the number of Navy EA-6B squadrons during the next few years to support the additional air wings, fulfill the Marine Corps EA-6B requirements, and modernize our reserve VAQ squadrons.

The EA-6B inventory as of January 1986 is 81, with 23 aircraft funded and undelivered. The procurement cost through the budget year is $4451.0 million. The FY-87 request includes $450.2 million for the production of 12 aircraft and advance procurement for 12 aircraft in FY-88. The recurring flyaway cost of the EA-6B is $23.8 million.

T-45TS

An important ingredient in the modernization of our tactical forces is the modernization of the aircraft with which we train the tactical aviators of the future. The T-45TS is a systems approach to meet that critical need. An integrated system consisting of aircraft, simulators and academics is being built around the following requirements: the earliest possible initial operating capability to reduce the impact of shortfalls in training aircraft inventories; the advantage of derivative technology which enables a firm-fixed price R&D effort; a procurement schedule which is executable; and an APN funding profile which is affordable. The full scale engineering development phase is well underway with a firm-fixed price contract which includes not to exceed prices for the first three production options.

For FY-87, advanced procurement funds are requested in the amount of $56.3 million, with R&D funds in the amount of $134.2 million.

V-22A Osprey

The V-22A Osprey (originally designated the JVX) program has successfully completed its preliminary design effort and is ready for the full scale development. Following a go-ahead decision in March 1986, the program will enter full scale development under fixed-price contracts for both the airframe and engine. First flight is scheduled for June 1988. The Navy, Marine Corps and Air Force are active participants in the development phase, with the Army joining in the procurement phase for a total program acquisition of 913 aircraft. The V-22A incorporates a new aviation concept combining the best features of a helicopter with those of a fixed wing turboprop aircraft.

The V-22 will likely revolutionize the aircraft industry much in the same manner as the helicopter did in the 1950's. While the initial emphasis for the V-22 has focused on the U.S. Marine Corps' requirement to rapidly and effectively move troops ashore during amphibious operations, a host of other applications are being planned for this remarkable aircraft. In addition to the Navy's plan to buy 50 combat search and rescue aircraft, we are examining several variants with exciting potential. The largest requirements is for 300 ASW aircraft as the

AVAILABLE

replacement for the S-3A Viking in the carrier-based fixed-wing antisubmarine warfare sole. Additionally, we are studying applications for the Osprey in the vertical replenishment, Carrier Onboard Delivery (COD), organic maritime surveillance, and over the horizon targeting missions. Technological spinoffs are another fertile area that can be explored as this advanced technology is explored fully. We expect that the other services and civil aviation will order more Osprey's once it is in full-scale development and has demonstrated its enormous potential. Additional variants of the V-22 are being studied and show exciting promise. No procurement funds are requested for the V-22 in FY-87. RDT&E funds are requested the the amount of $386.8 million.

Combat Search and Rescue (CSAR)/Special Warfare Support

The revitalization of Navy CSAR and special warfare support is recognized as an essential requirement and is progressing toward the Navy's goal of providing a mission capable, combat survivable aircraft, with an ability to embark aboard a wide variety of ship platforms. Assigned entirely to the Naval Reserve, our present aircraft are old and limited in capability and survivability. The V-22 tilt-rotor aircraft program is the long-term solution and will provide an affordable and highly capable combat SAR and special warfare weapons system. Fifty V-22's will be delivered to the Navy commencing in FY-94 for two active duty and one reserve squadron including pipeline and training aircraft. Full operational capability for Navy CSAR and special warfare support is projected for FY-97 and allows the forward deployment of two or three plane V-22 detachments on a peacetime rotation basis.

To fill the void until the mid-Nineties, Congress has authorized a total of $37.0 million in APN funding to purchase new combat SAR helicopters for the Naval Reserve. We have programmed additional outyear funding and are attempting to accelerate procurement. We are pursuing a competitive acquisition strategy to procure 18 interim Naval Reserve aircraft that are affordable and possess a substantial improvement in mission capabilities no later than FY-88/89.

We have an ongoing requirement to improve our current active duty combat SAR/Special Warfare Capability. We are in the process of determining cost and feasibility of developing mission kits for rapid installation into fleet helicopters and increasing aircrew training in this mission area to provide a limited combat search and rescue capability until V-22 introduction.

CH/MH-53E Super Stallion

The CH-53E is a 3-engine helicopter designed to lift 16 tons. It is a shipboard compatible, heavy transport helicopter configured for both Marine and Navy missions. Marine missions include amphibious/heliborne assault (providing for lift and movement of cargo and troops), and heavy lift shore operations (including tactical recovery of downed or damaged aircraft and equipment). Navy missions include Vertical Onboard Delivery (VOD) and Airborne Mine Countermeasures (AMCM). The first two MH-53E'S, the AMCM version of the CH-53E, are being delivered in 1986. The MH-53E will have significantly enhanced AMCM capability over the presently deployed RH-53D. AMCM associated improvements will also enhance the aircraft's ability to perform utility and special missions by significantly increasing range and navigation capability.

The CH-53E inventory as of 1 January 1986 is 89 with 14 aircraft funded and undelivered. The procurement cost through the budget year is $2,181 million. The FY-87 request includes $236.6 million for the production of 14 aircraft, 10 CH-53ES and four MH-53E's. Advance procurement in FY-85 through 88 reflects a Congressionally approved airframe multi-year procurement strategy for FY-86 through 89 for procurement of 56 aircraft. The recurring flyaway cost of the CH/MH-53E is $14.0 million.

E-6A TACAMO

The E-6A is a land-based derivative of the commercial Boeing 707-300 series transport and the E-3A AWACS aircraft. It is equipped with high by-pass turbo fan (CFM-56-2A-2) engines, extended environmental control provisions and a special mission avionics system consisting of a reconfigured AN/USC-13(V)-21 transceiver. The mission of the E-6A is to provide a communications relay for emergency action message (EAM) delivery to the fleet ballistics missile submarines.

The first two E-6A aircraft will be procured in FY-86 with remaining 12 aircraft funded between FY-87 and FY-89. The procurement cost through the budget year is $366.2 million. The FY-87 request includes $329.4 million for the production of three aircraft. The recurring flyaway cost of the E-6A is $62.0 million in constant FY-84 dollars.

PREPARED STATEMENT OF LTGEN K. A. SMITH
DC/S FOR AVIATION, HQMC

Mr. Chairman and Distinguished Members of the Committee:

I appreciate the opportunity to testify before this committee on behalf of Marine aviation. On this, the occasion of my second appearance before the committee, it is a pleasure to report that 1985 was an even more productive year than the superb year before. With the strong support of the Congress, Marine aviation continues to reach levels of preparedness across the capability spectrum which are unparalleled in Marine aviation's 75 year history. My purpose is to provide an overall assessment regarding the status of Marine aviation today, as well as highlight Marine aviation programs contained in the President's FY-1987 Budget proposal.

In the conduct of amphibious operations, Marine aviation provides one of the three components of a Marine Air Ground Task Force (MAGTF). The ground combat element serves as the core of the MAGTF with the aviation combat element and the combat service support element providing essential support for the prosecution of amphibious warfare. The capability to conduct successful tactical air operations is essential to the execution of amphibious operations. With considerable support from the Congress, Marine aviation has, over a period of years, established and refined an organization with equipment required to support the MAGTF while ensuring a significant degree of commonality with Navy aviation forces. Support requirements of MAGTF and Navy aviation demand a flexible and responsive aviation combat element task organized to meet the anticipated threat across the entire range of potential operating environments.

Tasks performed by the Marine aviation combat element are embodied in six separate functions of Marine aviation. The first function, air reconnaissance, provides intelligence gathering capability essential to the successful conduct of military operations. Marine aviation's contribution to the intelligence effort is essentially tactical in nature and may be further described in photographic, electronic, and visual terms. Photographic capabilities vary in sophistication from the hand- held camera used in the OV-10 A/D to the more advanced side- looking airborne radar and infrared imagery means available in the RF-4B and planned in the F/A-18D. Electronic reconnaissance conducted by the EA-6B enables capture and examination of the electromagnetic spectrum for potential intelligence information. Visual reconnaissance applies to intelligence information gathered from direct airborne observation by specifically trained personnel such as aerial observers in the OV-10A/D.

A second function of Marine aviation, antiair warfare, provides air superiority which permits other ground and aviation forces to function relatively unimpeded by enemy aviation forces. The antiair warfare function of Marine aviation is intended to gain and maintain control of airspace over the battlefield. This function is primarily accomplished by our F/A-18 and F-4 fighter forces and ground based missile air defense forces such as the Hawk and Stinger systems. Also, antiair warfare includes those actions taken to destroy or reduce the enemy air and missile threats before they are launched through the use of electronic countermeasures, resident in the EA-6, as well as strikes by A-6, AV-8, and F/A-18 aircraft.

The third function, assault support, is the capability which moves combat personnel, supplies, and equipment of the MAGTF by aviation means. Fixed and rotary wing aircraft are utilized to perform this task requiring a mix of performance characteristics and capabilities available in the CH-46E, CH-53, AH-1, OV-10, and KC-130 aircraft. Aerial refueling is conducted by the KC-130 and helicopterborne assault by the CH-46 and CH-53, to include troop transport, resupply, and medical evacuation. The V-22 assault aircraft under development is intended to replace the CH-46E.

Offensive air support, our fourth function, delivers timely firepower, when and wherever needed, against enemy installations, equipment, and personnel. A distinction is drawn between deep air support conducted at a distance from ground forces and close air support, which is inherently close to ground forces and a trademark of Marine aviation. Offensive air support is accomplished by a variety of attack aircraft intended to meet many demanding operational and environmental challenges. These aircraft are the A-6, F/A-18, and the AV-8. Close air support will become even more responsive with the introduction of the night attack initiative which is intended to expand the useful operational envelope of our aircraft.

Electronic warfare, the fifth function, is primarily conducted by the capable EA-6B. This function describes the efforts of aviation forces to determine, exploit, and reduce or prevent hostile use of the electromagnetic spectrum while retaining the same spectrum for friendly force utilization. HARM and Sidearm missiles, fired by our fixed wing and rotary wing aircraft to shutdown enemy radars, are also an integral part of electronic warfare.

The final function, command and control, is driven by the necessity of the aviation combat element to fully coordinate and integrate all the preceding functions. Command and control of aircraft and missiles may be best described as the synthesis of a multitude of tasks previously discussed. Nonetheless, the integration of all aircraft activities into a single, coordinated effort is accomplished using a variety of systems. The systems planned to continue this critical function include the Improved Direct Air Support Center (IDASC), the Tactical Air Operations Module (TAOM), and the Advanced Tactical Air Command Center (ATACC). Together these systems provide airspace and air traffic control, operational flexibility in the employment of aviation assets, and necessary coordination of the aviation combat element within the overall MAGTF concept of operation. Decoys for the TPS-32 and TPS-59 command and control radars provide a degree of survivability by attracting enemy anti-radiation missiles. These six functions represent the full capability required of Marine aviation.

Having briefly outlined Marine aviation requirements, let me emphasize that the Marine Corps is increasingly mindful of the trust placed upon us by the American people to ensure those resources invested are utilized in an efficient yet effective manner. Toward this end, review of our requirements is a continual and dynamic process. You may note with pleasure several adjustments which have been made both in programming equipment and refining our organizational structure. The intended goal is to provide the United States with a Marine Corps far more capable and prepared tomorrow than today.

Marine aviation preparedness has experienced a steady improvement over the past few years. For example, I reported last year that aircraft readiness had achieved record high levels. In 1985, these records were surpassed with a new overall aggregate readiness record of 75 percent mission capable. Figure 1 graphically portrays the gradual rise over the past five years in aircraft mission capable readiness.

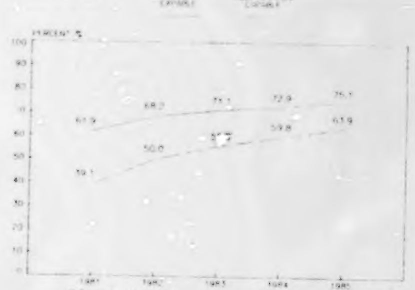


Figure 1 - Aircraft Readiness Rates

The most startling improvement, however, is reflected in the dramatic rise in the full mission capable rates also depicted in Figure 1. Full mission capable status indicates the availability of combat aircraft to perform the full range of tactical missions for which they were designed.

It has become axiomatic that the challenges posed by an increasingly sophisticated threat continually drive development of weapons systems technologically more advanced. This cycle of technological reliance to counter the threat has often, in the past, caused an adverse impact on aircraft full mission capable readiness. Although new aircraft being introduced to the fleet today continue to possess the latest affordable technology, they also reflect a conscious and concerted effort to design systems which are reliable and maintainable. For example, the F/A-18, a sophisticated frontline strike fighter, averaged 85 percent mission capable and 82 percent full mission capable for the year 1985. The AV-8B, in its first year of introduction, demonstrated an equally impressive 85 percent mission capable rate while achieving a 79 percent full mission capable rate for 1985.

These high levels of aircraft readiness are a testimony to aircraft design as well as to the professionalism of the men and women who operate and maintain these aircraft. The level of dedication these individuals demonstrate on a daily basis is extraordinary. The difficult circumstances under which they work make their collective achievements even more remarkable. Enthusiastic and purposeful, these young Marines must be provided the necessary incentives required to ensure their invaluable skills are retained. Certainly, no greater inducement can be provided than the continued support of the Congress for quality of life improvements. This single commitment is a necessary incentive to retain their invaluable skills.

Building on the innate skills of our Marines, training ensures the expertise required to operate and maintain today's sophisticated aircraft and equipment is fully developed. Marine Aviation Weapons and Tactics Squadron-One (MAWTS-1) provides a superb example of a training initiative which has made a significant and positive impact on the combat proficiency of Marine aviation. MAWTS-1 is chartered to provide graduate level training in aviation tactics and techniques to already highly qualified Marine aircrewmen. Upon completion of the course of instruction, these Marines, designated Weapons and Tactics Instructors return to their parent organizations to pass on their knowledge to other Marine aircrews.

A major contribution to the preparedness of Marine aviation has been the continued funding by the Congress of the Flying Hour Program. This program represents the major means of upgrading and maintaining the readiness of our aircrews much like the full mission capable and mission capable rates do for our aircraft. We have used the same building block approach to accomplish increases in both areas. In 1985, we flew over 350,000 hours which resulted in a significant and measurable increase in aircrew combat readiness. The flying hour request of 369,528 hours for FY-1987 is required to carry on this program and will increase Marine Corps capability. Today, our aircrews are at their best state of readiness since Vietnam. In order to continue to be capable of providing combat ready aircrews on short notice, Marine aviation squadrons must maintain a uniform readiness posture. Your support is crucial to the continuation of this readiness improvement program.

The role of aviation safety in conservation of irreplaceable men and costly equipment continues to challenge our operating forces. Overall, the accident rate for 1985 reflects a slight increase over the historic low rate of 4.63 per 100,000 flight hours demonstrated in 1984. The 1985 mishap rate was 5.23 mishaps per 100,000 flight hours. The high level of full mission capable aircraft, and the improved Flight Hour Program contribute in a major way to an overall downward 10 year trend in aircraft mishaps. However, Marine aviation continues to be profoundly concerned with loss of lives and equipment. As a Corps we continue to adopt initiatives which should support further reductions in the mishap rate. Some of these safety initiatives include early identification and documentation of unsatisfactory aeronautical performance, improved dissemination of safety related information, and closer cooperation between aircraft manufacturer and operator. As an example, a mishap pamphlet for each aircraft in our current inventory will be prepared by the Naval Safety Center for distribution to all aircrews. These pamphlets describe factors which have led prior aircrews to mishaps and are an attempt to prevent recurrence.

Turning to the future, the V-22 development program remains the Marine Corps' highest aviation priority. The strong congressional support expressed in the FY-1986 Budget has enabled the Department of the Navy (DON) to move forward with development of this vital program. As we rapidly approach the 1990's, our current medium lift aircraft, the CH-46, which has been in the fleet since 1965, will become increasingly unable to perform the pivotal role. Introduction of the V-22 is essential to maintaining a credible amphibious lift capability. The strategic and tactical applications of the V-22 far exceed the speed and range capabilities of existing CH-46 fleet of assault support aircraft. Independent of critical sealift and airlift, the V-22 may be strategically deployed over an unrefueled range of 2100 nautical miles. This capability enables timely marriage of aviation forces with those ground elements assigned to Maritime Prepositioning Ships (MPS) brigades. The net effect is a "force multiplier" and a decrease in strategic airlift reliance.

The V-22 permits rapid unprecedented buildup of combat power ashore which is an established and fundamental principle of amphibious and vertical assault operations. American Marines may be employed well in advance of a combined surface assault to isolate the objective area and block potential counter-attacking enemy forces. The V-22 capability of lifting 24 combat loaded Marines or 10,000 pounds of cargo reduces, by almost half, the time required to deliver the same load today. As the 250 knot cruise speed of the V-22 reduces the time between assault waves, it markedly improves force survivability through rapid buildup of combat forces in the early stages of assault operations. Equally important, these same performance characteristics will enable combat forces to reduce their vulnerability through dispersion, yet maintain the ability to rapidly concentrate combat power at the decisive time and place.

Negotiations recently concluded have led to an agreement on both airframe and engine development contracts under a total $2.5B development cap. A fixed price incentive contract for a not to exceed cost of $1.8B has been reached with the Bell-Boeing team. The airframe contract will produce six flight and three ground test articles. An additional feature requires a firm fixed price contract with options for a not to exceed cost on each of the first four production lots. The engine contract was awarded to Allison for the lease of 21 engines at a cost of $76.4M. In both cases, contracts were negotiated to ensure the V-22 is developed in the most economical fashion, while at the same time maintaining required capabilities.

Another economic consideration focuses on the inherent technology utilized in the V-22. While the V-22 is intended to initially be procured as a medium assault aircraft, it incorporates many of the technological features found in modern high performance aircraft. For example, composites and digital fly by wire technologies are being utilized to optimize overall performance and reliability.

Although the Department of the Navy is sponsoring the development of the V-22, the joint procurement program involves all four armed services. An initial buy of 913 aircraft provides the Marine Corps with 552, the Army with 231, the Air Force with 80, and the Navy with 50 aircraft. As the performance of the V-22 is fully realized in development, we are confident these initial procurement levels represent only a fraction of the combined services' requirement. Within the Department of the Navy alone, potential mission applications, including anti-submarine warfare, are being examined. Also, the application of tiltrotor to civil aviation is unbounded. The V-22 is our number one priority because it offers a significant enhancement and sustains the capability to conduct future amphibious operations.

The AV-8B represents another aircraft whose unique characteristics are particularly applicable to the expeditionary environment of amphibious operations. The Congress may be justifiably proud of the key role it played in AV-8B development. Uninhibited or restricted by fixed airfields, the AV-8B provides timely and accurate close air support to engaged ground forces. Flexible basing opportunities enable it to be dispersed and operated from several geographically separated sites, thereby decreasing aircraft vulnerability to enemy attack and improving responsiveness. A total of 328 AV-8B's are to be procured and distributed across the 8 light attack squadrons and one training squadron in the Marine Corps. Each attack squadron will operate 20 aircraft. Two squadrons are now operational, and a third squadron will transition in April of 1986. As the fourth squadron receives the AV-8B in FY-1987, conversion of existing AV-8 A/C aircrews will have been completed.

This coincides with the July 1987 introduction of the TAV-8B, a two-seat trainer aircraft for transitioning A-4 pilots and flight school graduates. The 28 total TAV-8B aircraft requirement is considered essential to safe transition of light attack aircrews and flight school graduates new to VSTOL operations. Over 90 percent commonality exists between the AV-8B and the TAV-8B, which considerably lowers developmental risk. TAV-8B development is proceeding on schedule with the first flight set for December 1986.

In our fighter squadrons, introduction of the F/A-18 has been superb in every way. The F/A-18 is equally capable in either fighter or attack roles, and it offers the promise of being one of the most versatile aircraft ever introduced. Reports from fleet commanders, Navy and Marine Corps alike, extol the virtues of this remarkable aircraft and the manner in which it has been introduced into the fleet.

Today, three Marine F/A-18 squadrons are operational on the west coast with two of those squadrons currently deployed aboard the USS CORAL SEA in the Sixth Fleet. On the east coast, one F/A-18 squadron is operational with two more squadrons transitioning this year and two squadrons forming in FY-1987.

The versatility of this aircraft has provided the Marine Corps a unique oppurtunity to reorganize our existing fighter (VMFA) squadrons to capitalize on the F/A-18's inherent flexibility. With the introduction of the two-seat F/A-18, the existing 12 aircraft VMFA squadron will be increased to 16 aircraft. The Tactical Air Controller (Airborne)/Forward Air Controller (Airborne) and reconnaissance missions are to be assumed by the new organization. The eight single-seat and eight two-seat F/A-18's in each squadron will all be austere all-weather capable -- a feature born out of the current Night Attack Development Program.

The Night Attack Development Program provides a vital night and under-the-weather capability which enhances the already formidable capability resident in the F/A-18 and the AV-8B. By capitalizing on the advantages of darkness, the night attack program increases aircraft survivability while overcoming many of the obstacles associated with night combat operations. The low cost of this program is accomplished by developing components for the AV-8B which will also be utilized in the F/A-18. Costs associated with AV-8B equipment common to the British GR-5 aircraft are reduced through shared United Kingdom and American development funding.

The system integrates several separate components enabling an aircraft to be operated during darkness at low altitudes. First, a cockpit with night vision goggle compatible lighting enables a pilot with night vision goggles to maneuver at low altitude at night. Second, a navigational forward looking infrared (FLIR) device allows precise identification of terrain features and enemy forces. Third, a moving map display is included to further reduce the potential for disorientation common to low altitude and reduced visibility operations. Finally, a rasterized heads up display (HUD) is included which displays forward FLIR information allowing out-of-cockpit orientation.

Continued congressional support is required to complete the timely development of the Night Attack system for incorporation into future AV-8B and F/A-18 production models. The Night Attack system is scheduled to be included in the FY-1987 procurement of the AV-8B and the FY-1988 procurement of the F/A-18. Future funding reductions would force a costly retrofit to ensure this capability is available in sufficient numbers. This austere feature complements the true all weather capability which is existent only in the A-6 series aircraft.

The A-6F development program is designed to ensure an all weather capability remains credible in the year 2000 and beyond. Current planning is for procurement of 150 production A-6F aircraft to be complemented by a modification program which could include up to 140 aircraft. The Marine Corps is to receive its first A-6F in 1993.

The CH-53E is approaching the third year of a four year multiyear procurement program. The CH-53E is the latest of the successful CH-53 series of aircraft which have provided assault support heavy lift for the Marine Corps. The CH-53E is essential to helicopter lift of the Light Armored Vehicle and the M-198 howitzer. The CH-53E also has a self deployability range of 1000 nautical miles which may be further extended utilizing its inherent air-to-air refueling capability. These capabilities make the CH-53E ideally suited to support current and projected Maritime Pre-positioning Force heavy lift requirements while reducing dependency on strategic airlift. These aircraft have been operating in the Fleet Marine Force since 1981 and have established a reputation as solid performers with impressive heavy lift credentials. Today, there are three CH-53E squadrons fully operational and available for deployment throughout the world. A single training squadron is based on the west coast and provides replacement aircrews for the three tactical squadrons. A fourth CH-53E squadron will transition from CH-53D's on the east coast in late 1987, providing a two squadron capability on each coast. The DON has approved an initiative to increase the number of CH-53E squadrons to six by 1994. This will be accomplished by transitioning two existing less capable CH-53A/D squadrons to CH-53E's. Reaching six CH-53E squadrons by 1994 is necessary in order to meet the DON amphibious lift requirement.

Programs are under development which improve existing capabilities of the CH-53E and enhance special operations potential. While these enhancements will not achieve the same level of sophisticated capability existent in the current H-53 Pave Low aircraft, emphasis is being placed on both FLIR and navigation systems. The components of this program specifically include a navigational FLIR, night vision goggle compatible cockpit lighting, redundant navigational systems, a defensive electronic countermeasures suite, defensive armament, and satellite communication capabilities.

Additional enhancements for the Marine Corps rotary wing force include fleet introduction of the AH-1W. The AH-1W is the latest in a series of growth versions of the AH-1 attack helicopter. Featuring an improved T-700 engine package and the Hellfire missile system, the first AH-1W will be received by the Marine Corps in June of 1986. The T-700 engine package provides vastly improved performance, particularly in high/hot environments. The Hellfire missile system allows engagement of armored forces at increased ranges with an improved armor penetration capability. Both the T-700 engine and the Hellfire missile system provide the AH-1W with increased capability and survivability.

This past year, Marine aviation began consolidating and realigning Light and Attack helicopter organizations into six uniform HML/A squadrons. These squadrons will now be assigned a mix of 12 AH-1 attack and 12 UH-1N utility helicopters. Reorganization of HML/A squadrons provides an efficient distribution of assets which enables a more balanced approach to contingency planning by eliminating the variety of dissimilar organizations, each tailored to meet local peacetime and contingency requirements.

Marine Corps command and control modernization efforts have also kept pace with the tactical aircraft improvements. The Tactical Air Operations Module (TAOM) provides a state of the art automated command and control system essential to maintaining an integrated air defense for the MAGTF. The TAOM can acquire, correlate and track twice as many adversary aircraft as the current system. Interoperability features enable linkage of this system to those of other United States services and allied command and control agencies. The modularized concept of the TAOM allows the system to be tailored to the scope and complexity of the operation. This characteristic reduces strategic and tactical lift requirements by two thirds, decreases the logistical tail to that absolutely necessary, and provides for rapid deployment and employment of essential command and control.

The TAOM is a joint program with the Air Force. The Marine Corps is the leader in development and procurement and will purchase 48 modules, while the Air Force is to receive 167. Acquisition is to be by a firm fixed price contract which features subassembly competition early in production and whole system competition in later years.

Another command and control initiative which appears before the Congress for the first time in FY-1987 is the Improved Direct Air Support Center (IDASC). The DASC is essential to the control and integration of close air support and assault support missions of Marine aviation within the MAGTF. The current DASC is old, worn out, and unsupportable due to a lack of replacement parts. The IDASC is a low cost initiative to resolve the supportability difficulty of the present system. While it represents only a short term, low cost solution, it is required to alleviate the supportability problem until the Marine Integrated Fire Support System is fielded in the 1990's. IDASC uses in production components, shelters, and intercommunication systems which are fully integrated. Fourteen IDASC systems are necessary to meet force requirements.

As the capability of the Active Marine forces is modernized, so too are the capabilities of the Reserve Marine forces. Chartered by the guidance that those forces who are the "first to fight" will also be the first equipped, a balanced approach to total force modernization has been adopted. The realistic and constrained allocation of this Nation's resources leaves little alternative. As a result, many long term Marine aviation Reserve force requirements remain unsatisfied. It is inevitable that some dissimilar equipment will be operational in the Reserve force as compared to their Active counterparts. While total force integration is certainly challenged by the existence of dissimilar equipment, this is not an insurmountable problem. In fact, solutions are currently being identified. For instance, upon activation, it is anticipated that Reserve F-4/A-4 squadrons will join Active Marine aircraft groups with dissimilar aircraft through the use of the Contingency Support Package (CSP) concept. Nevertheless, Marine aviation intends to continue its efforts towards modernizing Reserve forces with aircraft similar to the Active force. The ultimate goal for our Reserve fighter and attack fleet is to replace the A-4M/F-4S aircraft with eight F/A-18 squadrons.

Modernization of Reserve aviation provides for replacement of aging aircraft and system enhancements to others. Ongoing transition to the highly capable A-4M will be completed with the fifth squadron receiving their aircraft in late 1988. The A-4M also has the highly accurate angle rate bombing system utilized by the AV-8B. In other improvements, the number of attack helicopter squadrons will be doubled commencing in 1987, and the AH-1J will be retrofitted with the Hellfire missile system. Additionally, a second 12 aircraft aerial refueler squadron is to be formed at Stewart Airbase, NY. The OV-10D aircraft, which features a highly effective FLIR system, will be introduced in 1988.

A continuing effort to explore innovative methods which more fully take advantage of Reserve expertise has provided some immediate results. The pressing need for more adversary aircraft prompted establishment of a Reserve adversary squadron, VMFT-401, to be based at MCAS Yuma, Az. This site was selected because of its proximity to air combat maneuvering ranges and Navy and Marine fighter squadrons. Thirteen F-21 KFIR aircraft will be leased from Israel under a no-cost lease arrangement and maintained under civilian contract. The KFIR's are to be operated primarily by highly skilled and experienced Reserve aircrews. VMFT-401 will commence operation in late 1986 and serve as a visible reminder of the contribution Reserve personnel make to national defense.

The unique maritime character of your Marine Corps often requires imaginative solutions and bold responses to impending challenges. Refinement of close air support and vertical assault doctrine and tactics are illustrative of revolutionary responses to the changing requirements of amphibious warfare. Most recently, the Congress lent its support to development of an aircraft ideally suited to the expeditionary environment characteristic of amphibious operations. The AV-8B remains the only VSTOL aircraft operational today in the free world as a result of congressional support.

This report is intended to portray the progress of Marine aviation toward meeting the challenges of the future. Rapid growth in technology offers both challenges and opportunities to the functions of Marine aviation. In every direction, the judicious application of resources is intent on providing the degree of military precision this country has come to expect from her Marines. Your continued support is vital to ensuring the unique role of the Marine Corps and its aviation component in fulfilling our national commitment.

Admiral Martin. Thank you, and good afternoon, Mr. Chairman and distinguished members of the committee.

Before I begin we would like to express our very deep concern over the illness of Chairman Addabbo, and wish him well and a speedy recovery. We were distressed to hear the news today.

Mr. Chappell. We appreciate your concern, and we are all extremely concerned, and we hope that the information that we have at this point is not altogether accurate. We hope that he will still make a recovery.

Summary Statement of Admiral Martin

Admiral Martin. Mr. Chairman and distinguished members of the committee, once again it is a pleasure to be here to present the fiscal year 1987 Aviation Budget submission, and to provide you with an overview of the status of Naval aviation.

I am accompanied today by Lieutenant General Keith Smith, who is the Deputy Chief of Staff of the Marine Corps for Aviation, Vice Admiral Joseph Wilkinson of the Naval Air Systems Command, and by Rear Admiral Stan Arthur, who is the Director of Naval Aviation Programs. Hopefully, we will collectively be able to respond to any questions that you have and any of your concerns.

I will keep my remarks restricted to the key elements and points that I would like to make. As opposed to discussion each individual program in a detailed manner as we have in the past.

NAVAL AVIATION

Mr. Chairman, Naval aviation has been on an upswing for a number of years, thanks largely to the support of this body, and this past year has followed tune.

We are acutely aware of the fiscal environment in which we find ourselves today, and accordingly, our entire program considers this.

First I would like to talk about Naval aviation itself. As you know, we are deployed today around the world. Since the 4th of November, 1979, we have had one, at times two, and sometimes three battle groups in the Indian Ocean. Today we have two carrier battle groups in the Mediterranean. We have one in the western Pacific, and we are operating off both the Atlantic and Pacific coasts.

MARITIME STRATEGY

The Chief of Naval Operations and the Secretary of the Navy have articulated our maritime strategy most effectively. In the center of this maritime strategy is the carrier battle group, and the center of that, of course, is the aircraft carrier.

To support this maritime strategy, a 600-ship Navy has been designed. That is the number of ships we require to deter adventurism and aggression throughout the world and to be capable should this deterrence fail to prevail in time of conflict.

But it is not the ships themselves that can inflict damage upon the enemy; it is the weapons systems that these ships carry in the form of missiles, guns, aircraft, and of course those systems that the aircraft carry. It is also dependent upon the people we have, their degree of readiness, and their degree of competency that will allow us to prevail in time of war.

CARRIER BATTLE GROUP

Our Navy program is constructed around 15-carrier battle groups, 14 carrier air wings, three Marine air wings coupled with a very strong modernized reserve force to support and augment as necessary, and of course those maritime patrol shore-based squadrons, the logistics support aircraft, and all that goes with supporting this carrier battle group and maritime support force.

To support 15 carrier battle groups, we have a requirement for 16 aircraft carriers. This structure allows us to accommodate one in the service life extension program [SLEP], well into the 1990s.

Our carrier air wings today are well balanced. We have a plan and a program now and for the future, in terms of the carriers, maritime patrol air, and reserve forces, that is balanced to do the job. We are constantly adjusting this balance relative to the threat we see today, and which is projected into the future.

The modernization plan we have in terms of our aircraft, squadrons, and reserve forces, is one that we hope will continue to meet the threat as it develops.

RESERVE FORCES

I would like to address the reserve forces which back up our active forces for just a moment because several new exciting things are being introduced into the reserves.

We have two active reserve carrier air wings and will be transitioning these air wings by a modernization plan, which will put them, in the immediate future, into the aircraft similar to those flown by the active squadrons; that is to say, the F-14, the F-18, the A-6E, and P3C and modern helicopters.

We will also have one reserve Marine air wing. There will be 13 reserve VP squadrons. These will be modernized to mirror image our active squadrons.

AIRCRAFT REQUEST

The APN plan, the appropriation request for the Navy in the FY-87 submit, is considered to be very balanced. We are focusing on the realities of the fiscal climate in which we operate as opposed to truly what we need.

There has been only 3.7 percent real growth in our aircraft appropriations act in 1986. Our 1987 submit, again in a belt-tightening fashion, will actually provide for a decrease of 2.3 percent real growth. The number of aircraft we said we needed a year ago was 329; however we are requesting only 271 this year. There is a flip side to this plan and that is we will require, in the future, more spare parts and more modernization in order to support the aging fleet.

The average age of the aircraft in the Navy today is 12.6 years. The average age of our carrier combat aircraft is 10 years.

To maintain this age, we would need to procure about 329 aircraft a year, but this year we have asked for only 271. This was done by scrubbing and rescrubbing, examining every possible alternative to achieve our balance.

This year's request will focus largely upon combat aircraft, combat support-type aircraft, and strategic connectivity aircraft, as opposed to other support and training aircraft.

In so doing, we have not changed our objectives or our goals of the future. We have slid the entire program to the right, realizing the risk in doing so. We simply cannot afford to have everything we would like or that we think we need. Recognizing this, we have tightened our belts as best as we possibly can.

Throughout this evolution of trying to determine what was best, what was affordable vis-a-vis what was required, we have searched for every means to reduce the cost, to procure less expensive alternatives to buy that which was good enough; to avoid goldplating, to reduce production lines, wherever we possibly could. In short, to ensure that we were the best stewards of the taxpayers' money that we possibly could be. I think we have achieved this in a reasonably good fashion. I think we have provided Naval Aviation with those forces which we feel are necessary to prevail in time of war, and to deter adventurism and aggression in time of peace.

The *Achille Lauro* incident is such an example from one end of the scale. Our operations in the central Mediterranean with Mr. Qadhafi moves toward the center of the scale but always with the eye of being able to accommodate our potential adversaries in time of war, and to ensure that we deter that war.

I would suggest the greatest fight we will have won in this century is the war we do not have to fight, because we were always ready.

PILLARS OF EFFECTIVENESS

I would like now to address our four pillars of effectiveness very briefly. These four pillars are force structure, readiness, modernization and sustainability.

Our readiness has improved on a constantly rising graph for the last five to six years. We decided a year ago, in terms of mission capable rates, which is a measure of readiness, that we would establish a goal having a ——— mission capable rate for our aircraft. We have achieved ——— this past year and I am going to increase that goal to ——— for this year.

Our deployed readiness has increased even to a greater degree. The F/A-18, for example, is performing at a readiness rate that we did not dream could exist. This is a result of buying reliabililty and maintainability, the spare parts, and the training that goes to ensure readiness.

I have an unsolicited message here from the commander of the Carrier Group two in the Mediterranean, I would like to quote one part from this which was written at the end of January.

He said, ———.

I have been flying aircraft for the U.S. in excess of 35 years and that is the first time I have ever seen rates that high.

Mr. Dicks. Is that the F/A-18?

Admiral Martin. Correct.

Mr. Dicks. That is a pretty good plane, isn't it?

Admiral **Martin**. I think it is a fine plane. It is surpassing all expectations.

Mr. **Chappell**. Don't overdo it.

Admiral, I want you to know that you people sent a lietuenant to fly that airplane, and I made the mistake of asking what it did, and he showed me what it would do, and he also made me promise never to oppose it again.

Admiral **Martin**. Mr. Chappell, you are pretty interpid.

Mr. **Chappell**. The lieutenant colonel, after flying me in the F/A-18 for an hour and a half in a simulated mission, flying against A-7's and all that sort of thing, finally said, "Congressman, is there anything else you want to see?" I said, "You're right." He said, "What is that?" I said, "The end of the runway."

Admiral **Martin**. The F-18 is truly a success story in readiness. Of course, our measure of readiness is achieved by having the spare parts and by having modern systems incorporated into the aircraft.

For example, the S-3 today is a success story because we were smart enough during the last four or five years to buy spare parts, whereas five years ago in 1981, it was not nearly as good. In 1981, we had a 35 percent mission capable rate for the S-3 simply because we didn't buy spare parts for it in 1974-1975. Last year, we had a 77 percent mission capable rate for that same airplane. It is actually the highest in the fleet.

Similarly, in the approach to readiness; by ensuring that we have those things that support readiness, we also enhance safety. I am very pleased to report again that we had a marvelous year in terms of safety. Last year I told you that we had the safety year in the record of Naval aviation. 1985 was not quite so good, but it was in the same ball park. Our safety rate was 3.39 mishaps per 100,000 flight hours.

Let's put this in context. I first started flying in the Navy in 1954. In 1954 our accident rate normalized to the same terms was 55.6 accidents per 100,000 flying hours, and we killed approximately 570 people that year. Safety is a big issue, and, of course, as our airplanes get older and we don't procure new ones, obviously the safety record will go down as will our readiness.

The next pillar of our effectiveness structure is modernization, and I have already addressed this to some degree. We recognize that new aircraft are expensive. Therefore, we have a program to update such aircraft as the P-3, a Weapons Systems Improvement Programs for the S-3, and other new block upgrades including a whole series of improvements that will make aircraft perform their missions better, and be more capable to meet the threat. In case of electronic warfare equipments, for example, we are trying to capitalize on technology. We are trying to drive costs down, and we are always looking at requirements versus cost and to include pragmatism. I think that this group of people has done a marvelous job in achieving that, to what we think is the best degree possible.

Modernization also includes such things as survivability, capability of aircraft, and the service life. After we complete the formal presentation, I think there will be a number of questions and concerns on some of the things we are doing downstream on our modern airplanes such as the A-6 and the F-14, and we will be pleased to respond to these questions on an individual basis.

I have also already touched on sustainability in terms of the value of adequately sparing airplanes, that is, providing the spare parts necessary in order to ensure that our aircraft have a staying power in time of war. We must have spare parts in order to meet the requirements of the heaviest flying that we can possibly predict. I think the programs we have to manage this are very good also. But I would point out that spare parts is a very amorphous subject. They don't have a lot of principal supporters in terms of lobbying efforts and the like. So spare parts is one thing that it is easy to decrement money due to lack of visibility, but this could be devastating if you had to go into combat without adequate spares.

We have emphasized in our procurement plan jointness and commonality; that is to say, we want to use what the Air Force has insofar as practical and vice versa. We also want to tie in closely with the equipments that the Army is buying. I think both in Marine Corps peculiar aircraft and in Navy aircraft, we have gone far with this effort, and will continue to go further.

We currently have a lot of commonality in avionics and support equipment. We will have much commonality in the V-22 program, a principal program for the Marine Corps in the years to come.

The Army is very interested in this aircraft, as is the Air Force. The Navy is looking at buying a large number of these airplanes, one purpose of which will be to replace the S-3 in its ASW role, its surveillance role, over-the-horizon targeting role, and for a host of other roles.

In the V-22, we will potentially have a program that will be common in three services, and if you want to count the Marine Corps role as being different, it would have four distinct roles.

Mr. Chairman and committee members, we have made significant progress in Naval aviation in recent years largely because of your help. The resurgence of our military strength has signaled a commitment to our allies and our adversaries that we will halt adventurism and expansion in this world. Naval aviation has a very great part of that program.

With your continued support, which we appreciate, we will continue to build upon this process, we are ready to answer your questions, but first, General Smith would like to discuss Marine Corps aviation for a few minutes?

SUMMARY STATEMENT OF GENERAL SMITH

General SMITH. Mr. Chairman and gentlemen, this is my second year before this committee and I look forward to working with you over the coming months to nail down the programs that are important to both of us.

MARINE CORPS AVIATION

I would like to first state that Marine Corps aviation is an integral part of Naval aviation.

As such, our commonality is almost totally complete. The planes that we operate are the same ones the Navy operates with just one or two exceptions.

I will be very brief and touch on just a couple of points, which Admiral Martin has already introduced.

The first is readiness, which is a measure of how well we can perform the tasks at hand with the resources which have been provided. Admiral Martin gave you a measure of improvement in mission capable rates since 1981 for the Marine Corps, this is an equivalent of 12 additional squadrons on any given day that would be on line to fight. This is a significant improvement, and has been due, in large part, to the support that this committee has provided.

Flying hours, a large part of the readiness equation, is the asset that permits us to train the aircrews which must operate airplanes wherever they may be. The requirement for hours is growing. Of course, as we have improved airplanes to operate, we need the equivalent preparedness on the part of the aircrews to operate them.

V-22

Second is the importance of the V-22 to the Marine Corps. We have changed the configuration of the ground combat element, which has grown in weight, cube and size. The CH-46, which the V-22 will replace, can no longer adequately provide the lift and support necessary in the movement of the ground combat forces to and around the battlefield. Without the V-22, we, as a nation, would be in the position of endangering the free world's only real amphibious assault capability. If we want to project power ashore anywhere on this globe, it is in the best interests of this Nation to bring the V-22 on line and on time. We are prepared to address the questions you may have on that program.

The AV-8B has been a highly successful program. The mission capable rates have been in the high ——— consistently. As we move to a total AV-8B force, it is in our best interest to provide a trainer, the TAV-8B, which is of the same configuration and capability as the AV-8B.

We are currently operating TAV-8As which are significantly different from the AV-8Bs. As we convert A-4 pilots and flight school graduates to the AV-8B, we need the TAV-8B for consistent and safe transition.

I won't say any more about the F/A-18 that has not already been said. Reliability was designed in the airplane from the ground up. Perhaps at cost in design, but with great savings in operating cost. It really is a strike/fighter airplane with magnificient capability.

On the less glamorous side, but equally important as you work on that total defense bill, is command and control. The command and control capability that we are buying is called the Tactical Air Operations Module and gives us capabilities to orchestrate forces on the battlefield. It is a joint program between the Air Force and the Marine Corps, which reduces the logistics requirements by two thirds. In other words, for one third of the cube and weight, we can provide a greater capability for command and control.

Another part of the command and control business is the improved Direct Air Support Center, which is at the heart of applying integrated air and ground fire power on the battlefield.

We are requesting an improved DASC, a gap filler until we get the fully automated DASC, later downstream. This is not a big dollar program, but it is essential to the coordination of our air and ground capability.

These are some of the more important programs for Marine Corps aviation, an integral part of Naval aviation. They are an essential part of the Marine Corps components which go to war; the aviation combat element which I represent, the ground combat element which the division commander represents, and the logistics combat element which the logisticians represent.

Again, thank you for the opportunity to present the highlights of these programs we are really emphasizing which are essential to the continuation of our capability.

Thank you, sir.

CONGRESSIONAL DIRECTION ON P-3C AIRCRAFT

Mr. CHAPPELL. Thank you, Admiral.

Admiral Martin, I notice you mentioned your intent to modernize the capability of Naval Reserve P-3's to a "mirror image" of the operating squadron P-3's.

Congress appropriated money in the fiscal year 1986 continuing resolution to upgrade the AQA-7 on the reserve aircraft, to give it additional channels for the more modern sonobuoys. I assume you are in complete agreement with that?

Admiral MARTIN. Yes, sir, Mr. Chairman.

Fundamentally, I believe that if we have reserves, we should have strong reserves with modern forces. If they are to be used in the maner in which I envision, that is to say replace attrites of the active duty units aboard our carriers, we cannot support a plethora of aircraft, particularly old ones.

We must have modern systems. I do agree with your statement that we should have the reserves in as modern equipment as we possibly can as early as we can, and I concur with your specific example of the P-3.

Mr. CHAPPELL. Thank you very much. I assume you anticipate procurement of this right away?

Admiral MARTIN. Within the limits of affordability.

Before we procure that, we are going to need it authorized, because I understand that $243.2 million has been appropriated, but not authorized.

Mr. CHAPPELL. Certainly no problem with affordability. We gave you an additional $240 million last year in the appropriations bill.

Now you are talking about authorization. On that point, do I understand that you people are pushing the authorization committee to get that done?

Admiral MARTIN. We are trying to get the authorization committee to act. I understand they are going to get together in the very near future on these issues.

Mr. CHAPPELL. I understand that one of your people, I believe it is you, Admiral Arthur, that does not concur with our action. Am I incorrect on that?

Admiral ARTHUR. Yes, sir, you are incorrect. I believe the discussion that you are referring to was the discussion on the P-3C update, modernization kits versus P-3C procurement. As you know, we were appropriated funds to purchase up to 9 P-3C's, six of which would go directly to the Reserves, plus money to buy an additional 33 update P-3 kits in FY 86, which brought us up to 48 kits.

When that was done, on OSD comptroller removed our funds—in FY-87 and FY-88. We now show 48 update P-3 kits in 1986, which zero in 1987 and 1988. The issue is, are they going to let us buy all of those kits in one year or spread the 48 into 1986 and 1987?

Mr. CHAPPELL. You are pushing for the AQA-7? Are you on board?

Admiral MARTIN. We are on board, and are doing our best within the limits of affordability.

Mr. CHAPPELL. We will settle that one by making sure you can afford it. When you said affordability, we agree that it is affordable, right?

Admiral MARTIN. Yes, sir.

SH-2F VS. SH-60B HELICOPTER

Mr. CHAPPELL. You are requesting six SH-2F LAMPS helicopters this year. Since it is far less capable than the SH-60B, why do you want to request more of them?

Admiral MARTIN. The SH-2 is a very capable aircraft. We are currently introducing a program to update the SH-2. We have a large number of ships in the United States Navy, particularly the 1052 class that will be going in the Reserves, which will not have the capability to handle the LAMPS Mark-III (SH-60B).

The SH-60B and the SH-2 programs are not in competition with each other, but complement each other. If we take the SH-2 and improve with something like a T-700 engine, and put a multi-mission modular capability in this airplane, we will be able to put it on some 80 smaller ships, that otherwise wouldn't have a significant ASW capability.

Therefore, it is not one or the other, it is mixture of both. It costs somewhere around $35 to $40 million to convert a ship to accommodate the LAMPS Mark-III, but the updated SH-2 aircraft with this multi-mission capability will perform the same role for much less, particularly when we put the towed arrays systems on the 1052 class frigates and on the FFG-7 class, which will be going to the Reserves. This will give the Reserves a very modern ASW capability.

Mr. CHAPPELL. What total system are you talking about?

Admiral MARTIN. They are looking at putting the SQR-18 or perhaps the SQR-19 on board those, a new generation of a towed array.

Mr. CHAPPELL. Has this been approved?

Admiral MARTIN. No, sir, not yet. Enhancing the ASW capability of those ships going in reserves is essential to our fleet modernization plan. ———.

Mr. CHAPPELL. Can't you do it with SQR-18?

Admiral MARTIN. No, sir. The SQR-18 cannot handle the frequency threat in the out years.

V-22 AIRCRAFT AFFORDABILITY

Mr. **Chappell**. One question about the V-22. Development costs of the V-22 aircraft appear to be exceptionally high considering the number of aircraft that the Services plan to buy.

Since you have discussed a reduced budget and stressed affordability, tell us about the Navy's plans to make this airplane an affordable procurement.

Admiral **Martin**. I think the V-22 will revolutionize the aviation industry much in the same fashion that the helicopter did in the fifties, across the spectrum.

Military, commercial, all Services as I had mentioned earlier.

We are planning for the V-22 to be the replacement for the S-3 and to be used in a host of roles that the S-3 performs now.

It is not necessarily going to be a one-for-one replacement, because the V-22 can hover. I envision the V-22 being the fixed wing organic carrier ASW aircraft, and we have a requirement for approximately 300 V-22s for that mission.

I see the V-22 also taking over ———.

Also, I envision it as the search and rescue vehicle for the Navy and hopefully for the Army and the Air Force as well. We are entering into discussions with both services in this regard.

In short, the V-22 has enormous applicability. The principal one right now, of course, is the Marine Corps requirement, which is a hard requirement in terms of an assault transport. The Navy presently is planning on buying 50 aircraft for the combat SAR role, and I have introduced a program which will buy about 300 additional V-22s to replace the S-3.

I understand the Army is also looking at replacing a whole host of their aircraft with the V-22.

That program hasn't matured yet, but we are excited about this airplane.

V-22 FULL-SCALE DEVELOPMENT

Mr. **Murtha** [presiding]. Let me ask questions about the V-22.

What caused the slip in the full-scale development?

Admiral **Wilkinson**. We have delayed the full-scale development pending negotiation of the full-scale development contract.

We were almost ready to award it last fall, but the Navy's acquisition situation strategy changed at that point. We shifted to a fixed price type development contract, and to do that, we had to go back with the contractor and take a good look at exactly what we were buying.

We had been planning to go on a cost-type contract, where the specifications can be somewhat looser than they can in the fixed price. Fixed price, we had to know exactly what we were buying and that takes time.

We have been successful in negotiating that agreement with the contractor, and we are essentially about ready to go now.

Mr. **Murtha**. Has the IOC date slipped?

Admiral **Wilkinson**. I don't believe it will slip much. I am not sure on that, but at this point, assuming that the contractor has not been standing still, we will be very close to the same IOC.

Mr. **Murtha**. Last Spring, NAVAIR analyzed the advantages of a fixed-price contract for the V-22. Did this study conclude that a fixed-price contracting strategy for FSD would be the best course of action?

Admiral **Wilkinson**. Yes, sir, it came out to be the best course of action. We have identified areas where we and the contractor didn't know what we were getting into, and we took those types of things out of the contract. We now have a much better opportunity to achieve the basic requirement.

V-22 FIXED PRICE CONTRACT

Mr. **Murtha**. The Secretary of the Navy recently stated that the Navy has obtained a fixed price development contract and not-to-exceed prices for the V-22. Could you briefly discuss the not-to-exceed prices you obtained, and provide the details by fiscal year for the record?

Admiral **Wilkinson**. Yes, sir, be happy to do that. Our not-to-exceed prices at this time are for the pilot production line. We will provide that.

[The information follows:]

The not-to-exceed price for the fiscal year (FY) 1990 pilot production lot of 12 V-22 aircraft (airframe/contractor furnished equipment) and non-recurring engineering is $900 million in FY 1984 dollars.

The engine not-to-exceed prices for the first four lots in then year dollars are as follows:]

[IN MILLIONS OF DOLLARS]

Fiscal year:	
1990—51 engines for	$116.2
1991—109 engines for	135.8
1992—188 engines for	196.7
1992—281 engines for	257.8

V-22 WITH ASW FOLLOW-ON MISSION

Mr. **Murtha**. It was recently reported that Secretary Lehman has directed the Navy to develop a V-22 variant for the S-3 ASW follow-on mission. Is this accurate?

Admiral **Wilkinson**. May I turn that over to Admiral Martin?

Admiral **Martin**. Would you repeat that, please?

Mr. **Murtha**. It was recently reported that Secretary Lehman has directed the Navy to develop a V-22 variant for the S-3 ASW follow-on mission. Is this accurate?

Admiral **Martin**. It is accurate, and my statement before refers, Mr. Murtha, we are planning to replace the S-3 with the V-22.

The Navy's plan is that the V-22 will be the replacement for the S-3.

The S-3 is a carrier based fixed-wing ASW aircraft.

V-22 ENGINE DESIGN

Mr. **Murtha**. Admiral Wilkinson, it was recently reported that when Secretary Lehman was given NAVAIR's recommendation for the V-22 engine design, he decided to make the selection himself. Is this accurate?

Admiral **Wilkinson**. That is accurate.

Mr. **Murtha**. Why does the Secretary feel it is necessary to make such a change?

Admiral **Wilkinson**. I can't speak for the Secretary, but at the time he thought it was an important enough decision that he should take that on himself.

Mr. **Murtha**. Was the engine proposal which was eventually selected different from the one you initially recommended to the Secretary?

Admiral **Wilkinson**. I did not make a recommendation to the Secretary.

Mr. **Murtha**. What was the relative advantages and disadvantages of the Allison engine compared to the other engines involved in the best and final offer phase?

Admiral **Wilkinson**. Without getting into source, sensitive selection areas, the Allison engine was adequate, and it met the requirement without any goldplating, and it was the cheapest alternative and also showed more capability for growth.

That is why we selected it.

Mr. **Murtha**. The gentleman from Washington.

V-22 PRIORITY

Mr. **Dicks**. I assume this program is one of your high priorities?

Admiral **Martin**. Indeed it is, very, very high priority.

General **Smith**. It is the number one priority for us.

Admiral **Martin**. Naval aviation and the Marine Corps are inseparable in terms of aviation. We work this issue together.

E-6A TACAMO AIRCRAFT CONTRACT

Mr. **Dicks**. I am glad to hear that. During the past several years, there has been a lot of activity on the Hill regarding a program called the E-6A.

Despite some discussion, Congress provided over $350 million to procure two E-6A TACAMO aircraft.

Can you tell us when you plan to award the fiscal year 1986 contract for the first E-6A aircraft, or has that been done? I think it has been done.

Admiral **Wilkinson**. We have turned on the contractor for the first two aircraft with an advanced acquisition contract. The contract will be definitized by September of this year.

E-6A MISSION

Mr. **Dicks**. My discussions with Secretary Taft and Admiral Crowe, the new Chairman of the Joint Chiefs indicate that they feel this aircraft will provide the additional capabilities that are necessary to full exploit the range of our Trident submarines, and that it is a very substantial enhancement of our C3 with those submarines.

Are Secretary Taft and Admiral Crowe correct?

Admiral **Martin**. Indeed they are. The mission is flown now in EC-130 TACAMO aircraft; incorporating ———.

Mr. **Dicks**. I have flown that mission.

Admiral MARTIN. The E-6A will improve upon the capability of the EC-130 in terms of ———.

Mr. DICKS. Which means you can base that aircraft on the Continental United States, disperse it, and increase its survivability because of that range?

Admiral MARTIN. I would not want to restrict the basing of it on the Continental United States.

Mr. DICKS. It gives you the option.

Admiral SMITH. It would be wise not to restrict the basing, Mr. Dicks.

Mr. DICKS. But the other plane is limited. C-130 is limited.

Admiral SMITH. No question, the EC-130 is limited.

Mr. DICKS. I am told when you are in the North Atlantic occasionally, if you have bad weather, that you can have problems ———. You may want to relocate in order to get the signal out, and that because of the limitations of the aircraft, that sometimes is impossible to do.

Isn't that accurate?

Admiral SMITH. That is accurate.

Mr. DICKS. The crews of the existing plane do quite well in terms of operating these missions, but that at certain times, we don't have coverage because of the limitations of the aircraft?

Admiral MARTIN. Of course, that aircraft is one of several redundant systems.

Mr. DICKS. What I am saying is, because of the limitations of the aircraft, and problems with it, ———. I am told that by the people who operated the plane when I was on the mission, occasionally, because of limitations of the existing aircraft, they have not been able to meet that requirement?

Admiral MARTIN. I think it is safe to answer that in the affirmative, with the caveat "occasionally" in there, because like anything else, aircraft go down and sometimes they don't have the coverage, sometimes the weather might preclude them as you suggest, from going into that area. I would caution you that the same circumstances could preclude the E-6A from providing that coverage for those same reasons, but to a lesser degree.

Mr. DICKS. It is a new modern plane, and the maintenance and reliability should be better than the C-130s?

Admiral MARTIN. Yes, sir.

Mr. DICKS. There is not a seat for the officer in charge of communications, on the EC-130. He has to sit on an apple box, and when we ask those people to go out for 11 hours at a time, it seems to me that this plane is needed. I think it is long overdue.

Admiral MARTIN. No question, Mr. Dicks, no question about that; like everything else, we need to modernize our capability, stay up with the technology, to put our best foot forward, so to speak, particularly in such an important element as strategic connectivity.

Mr. DICKS. Thank you very much, Admiral.

NIGHT ATTACK PROGRAMS

Mr. MURTHA. Let me ask about the AV-8B Night Attack.

Admiral Wilkinson, last year the Navy testified that the night attack upgrade planned for the AV-8B and F/A-18 would be developed initially for the AV-8B, and would be "copied" into the F/A-18 approximately 18 months later. However, this year we see a schedule which shows the two programs running concurrently.

Why was the F/A-18 night attack program accelerated?

Admiral WILKINSON. I don't believe it was, Mr. Murtha. It is following the AV-8B, which is in the lead, and 50 percent of the design is complete.

It will get AV-8Bs with night attack in the fiscal year 1987 buy, one or two aircraft. We don't get into the F-18 until the fiscal year 1988 buy.

Mr. MURTHA. The information of Admiral Busey last year in answering Mr. McDade's question about the F/A-18 said, the F/A-18 will follow a year to a year and a half after that.

He was talking about late 1987, and a year and a half after late 1987. According to your schedule here, there is only one quarter difference.

According to what Admiral Busey said last year, there is a substantial acceleration in the schedule.

Admiral WILKINSON. I will get that for the record.

[The information follows:]

The F/A-18 Night Attack schedule has been accelerated from earlier estimates due to the following factors:

(1) Actual commonality between F/A-18 and AV-8B components was greater than originally estimated.

(2) Congress appropriated additional funds in FY 1985 to accelerate R&D work for the Night Attack program.

These two factors have permitted the Navy to incorporate Night Attack capabilities earlier in FY 88 than was previously anticipated. This accelerated incorporation of Night Attack capability in F/A-18 will accrue substantial benefits to the Navy. These benefits include reduced development cost due to commonality with AV-8B, a larger production base over which to allocate nonrecurring costs, earlier operational capability and reduced future retrofit costs.

Mr. MURTHA. This was to be primarily a British-developed system. How much of the total RDT&E costs for this effort have the British officially agreed to assume? How is this agreement documented?

Admiral WILKINSON. They are putting up about $19 million, as I recall.

Mr. MURTHA. Why is it necessary to begin procurement in fiscal year 1987, before technical and operational evaluation and first flight of the equipment?

Admiral WILKINSON. May I ask Colonel Blot to answer this?

Colonel BLOT. We are developing the AV-8B night attack system, and are testing it as we move on downstream. We have critical points where we will test and evaluate development. This is an effort to get night attack incorporated on the production line where it is literally one-half the cost of incorporating it compared to the production line.

We are running a concurrent schedule, but we do have checkpoints where we test everything, and we will have it checked out before we deliver the aircraft, sir.

Mr. MURTHA. For the record, please state the amount and location of procurement funds for the night attack upgrade in fiscal year 1987, separately for the AV-8B and F/A-18 programs.

[The information follows:]

The total amount of procurement funding in fiscal year [FY] 1987 is $7.9M requested for the AV-8B. This includes $6.3 million of non-recurring and $1.6 million of recurring costs.

No procurement funds for F/A-18 Night Attack capability are contained in the President's FY 1987 budget request.

FLYING HOUR PROGRAM

Mr. **Murtha**. Let me ask Admiral Martin about flying hours, you mentioned about the increased safety, and I know we talked to the Air Force about this.

Has Gramm-Rudman-Hollings affected your flying hours in the Navy.

Admiral **Martin**. Not as of right now, sir, but this is something we must watch very carefully, because flight operations, and particularly in carrier aviation, a certain number of flying hours per air crew is essential to maintaining proficiency in the carrier environment. We must be very cautious that we do not disrupt our flying hours in the interest of false economy, or we will have a very serious impact on our readiness and safety record.

Mr. **Murtha**. How much impact are the increased flying hours going to have on the better safety record?

Admiral **Martin**. That is certainly a subjective call, Mr. Murtha. To try to equate flying hours to safety is difficult, but we have established norms which we require a pilot to achieve for carrier proficiency and for mission accomplishment efficiency.

They go hand in hand with safety. We have proved that if a person does not fly off a carrier for 15 days at night, he is considered a greater risk and cannot do it again unless he has a warm-up flight.

To try to quantify that is very difficult. Proficiency has one of the principal impacts on aviation safety.

Mr. **Murtha**. How did the flying hours change in the last two or three years? For instance, the Air Force, unfortunately, is cutting back immediately on flying hours, and I am concerned about that.

This committee has always pushed more money for more flying hours available for all the Services.

Now, were the flying hours the same last year or have you increased flying hours, for last year and the year before or stay about the same?

Admiral **Martin**. I don't have the figures with me, sir. I will provide those for the record.

[The information follows:]

The average hours per crew per month flown by the TACAIR/ASW pilot in the Department of the Navy for the past three years were:

Fiscal year:	*Hours per crew per month*
1983	23.6
1984	24.7
1985	24.9

Admiral **Martin**. We have redefined what we feel is an adequate amount of time for people to fly, and the redefinition is called total mission readiness. We have asked for our flying hours to be programmed to 85 percent of the total mission readiness at this time.

This will give an air crew a nominal—and I underscore the word nominal—25 hours per air crew per month, which I personally feel

AVAILABLE

subjectively is about the proper level required to maintain proficiency, but that varies, of course, by type of aircraft, so it becomes more complex.

I can't speak for the Air Force, but I would be opposed to reducing our flying hours in the United States Navy, and I would strongly oppose it.

EFFECT OF GRAMM-RUDMAN-HOLLINGS

Mr. **Murtha**. I appreciate that, because when I was on my trip to the Philippines, every Air Force Base we stopped at, I asked them how Gramm-Rudman-Hollings affected them, and they said we cut back 3 percent of flying hours, and I came back and have been complaining about it ever since then, so that is a major concern of ours in cutbacks on the flying hours, but how has Gramm-Rudman-Hollings affected aircraft procurement as a whole?

Admiral **Martin**. Thus far, Gramm-Rudman has not.

Mr. **Murtha**. Spare parts buys or in any way?

Admiral **Martin**. As of this date, no, sir, but we are expecting it to. As of today and for our fiscal year 1987 budget, it has not.

May I ask one of my financial people to address that?

Ms. Hughes?

Ms. **Hughes**. Harriet Hughes, I am with the Deputy Chief of Naval Operations for Air Warfare.

The way we have handled the budget cuts for Gramm-Rudman has been to apply an across-the-board hit exempting those programs that are on fixed price contracts or multiyear contracts, from the cuts.

Now, those new programs that were exempted were those which could not handle any kind of reduction. We believe that the remaining programs will be able to execute with the small decrements that were required for the fiscal year 1986 cut. In a few missile procurement programs, we will have to reduce quantities.

As far as our aircraft procurement itself, we know of no case at this time where we will have to delete any air frames. We may have to defer the procurement of some support equipment into the following years, and we feel that given the current pricing situation, we can accommodate some of it through lower price procurement—we are continuing to drive the cost of spare parts and support equipment down. If prices are driven down, we may be able to stand up all of our squadrons from the 1986 buy within the budget.

At present, the President and the Defense Department's budget for fiscal year 1987 was submitted to Congress within the control totals of Gramm-Rudman.

We expect that if Congress continues to do its share, the budget that will come out in 1987 will remain balanced within the goals of Gramm-Rudman. If that happens, then we would not expect to see any further decrements to our aviation program beyond that which we have already mentioned.

Mr. **Murtha**. You are telling me that spare parts have not been affected?

Ms. **Hughes**. The price of the spare parts have been coming down. In absolute dollars, we will be spending less in 1986 for spare parts, that is true, but in terms of quantity we hope to achieve sufficient savings to buy approximately the same quantity.

Mr. **MURTHA**. You are saying your support equipment you may have to defer. Does that mean it will cost more?

Ms. **HUGHES**. We are hoping to be able to achieve economies and efficiencies in the support equipment wourld much like we did in the spare parts, and in the airframe area, over the next two years.

Mr. **MURTHA**. So far you have not had to defer any aircraft procurement?

Ms. **HUGHES**. No aircraft procurements have been deferred.

Admiral **MARTIN**. I stand corrected on my comment that we have not lost anything thus far to Gramm-Rudman. Let me give you some figures. I would have to ask where these losses came from, but here are the adjustments that we have taken thus far in fiscal year 1984—$27 million; in fiscal year 1985—$113 million; and in fiscal year 1986—$547.6 million in the APN 1 through 7 accounts, which have been sequestered for Gramm-Rudman.

Mr. **MURTHA**. What does that mean in practical terms to us?

Admiral **MARTIN**. I will have to get back to you for the record with that, Mr. Murtha. I can't give you that at this time.

[The information follows:]

The following reductions have been experienced during the past year in the Aircraft Procurement, Navy Appropriations:

[In millions of dollars]

	Fiscal year—		
	1986	1985	1984
Congressional cuts—contract savings		$490.5	$60.8
Congressional cuts—escalation	516.3		
Gramm-Rudman sequestration	547.6	113.0	27.0
Total	1063.9	603.4	87.8

These reductions total $1.755 billion. All were assessed without identification of vertical program reductions. While thus far, it has been possible to retain the authorized quantities of aircraft and offset a portion of the cuts due to lower prices resulting from completion, configuration control, and lower inflation, it has not been possible to fully compensate for reductions of this magnitude. Many modification, support and spares requirements have been rephased to later years placing an even higher demand on the FY 1987 budget request. In practical terms, this means that if the FY 1987 budget experiences reductions similar in nature to those above, we will either be unable to buy adequate equipment modernization, support and spares to sustain our Forces or we will have to reduce aircraft procurement quantities drastically to not only buy the deferred support but to compensate for higher prices due to lower, less economic procurement rates. Our prices may also increase due to the instability in our acquisition strategies resulting from inadequate time to restructure.

Mr. **MURTHA**. That is all I have, Mr. Chairman.

FLYING HOUR PROGRAM

Mr. **CHAPPELL**. Admiral, let me ask one question about flying hours. You are saying 25 flying hours per crew. I thought we used to say you needed at least about 28 hours, especially with carrier-type aircraft. If you take 25 hours a month, if you had, say, three-

AVAILABLE

hour flights, you would have only eight hops or eight flights a month. That is less than two flights a week when you get it down. Isn't that getting awfully tight?

Admiral MARTIN. No, sir, Mr. Chairman. I don't think so because we are normalizing this over an entire year. What you are really talking about is about 300 hours a year, 25 hours a month, typically for a TACAIR pilot.

For example, if somebody goes on leave for one month, he is not going to do any flying, so, what this boils down to is something greater than 25 hours per month for the rest of the year. While deployed, they are flying much more than that. Twenty-five hours a month is considerably better than many of us had in our careers while we were operating, but I with today's high performance aircraft, I would not want to go any less than that.

PERFORMANCE OF AIR CARRIER AIRWINGS

Mr. CHAPPELL. I absolutely concur with that. I understand you have recently received a message report on the performance of the reserve carrier airwings on board U.S.S. RANGER. Would you summarize this report for us?

Admiral MARTIN. Yes, sir, I will, and I think this is another manifestation of our interest in modernizing and integrating the reserve forces' capability in with that of the active forces.

I have the message with me, and this is a message that is unsolicited. It is not even addressed to me. It was from Commander Carrier Group one to the Commander of the Third Fleet in Hawaii. He discussed Reserve Carrier Airwing 30 embarked for active duty training in January of 1986 aboard U.S.S. RANGER off the Southern California Coast. A brief summary is in the first paragraph, and I quote: ———.

Mr. CHAPPELL. That is tremendous.

Unless there are objections by the committee, I would like for us to summarize or put that in the record at this point.

Admiral MARTIN. I would present the entire message for the record, since this is a closed hearing. This is a confidential message.

Mr. CHAPPELL. Fine. Let's put in the record at this point and we commend the reserves on that. I am personally glad to have been a part of the Naval Reserve for a long time.

[CLERK'S NOTE.—Classified material removed.]

Admiral MARTIN. As we speak today, Mr. Chairman, and this subject is also classified, that we have a reserve combat SAR deployment with ———.

Mr. CHAPPELL. Thank you very much.

Mr. McDade?

AIRCRAFT PROCUREMENT PROGRAM

Mr. McDADE. Thank you, Mr. Chairman.

I want to welcome you, Admiral, and your colleagues. I was looking at the differences between your estimates in 1986 for fiscal year 1987 and what you have actually requested, and I see that you estimated that you were going to get 221 combat aircraft for $7.7

billion. In fact, you have requested 259 for $6.9 billion. You have more aircraft, at a lesser cost. Congratulations.

Do you want to amplify for the record how you managed to achieve that saving?

Admiral Martin. In general terms, sir, the cost of our systems and subsystems is of highest priority in our interest to be good stewards of the taxpayer's dollar. Fortunately, the entire team works with this in mind.

I would like to ask Admiral Wilkinson to address specific initiatives that achieved this cost savings.

Admiral Wilkinson. We have got a number of things going, as you know, sir. Competition certainly is a significant area. During 1982 in NAVAIR, about 5.5 percent of our procurements were competitive. In 1986, we are going to be close to 26 percent. That is a significant increase. Change control has been extremely tight within the Navy, changes to aircraft and weapons.

Mr. Chappell. You are talking about engineering changes?

Admiral Wilkinson. Engineering changes, yes, sir. We make absolutely sure that you can't do without the change.

Mr. McDade. Admiral, are you comfortable that this was a good decision to change the system?

Admiral Wilkinson. Oh, yes. I think that is one of the primary reasons that you are seeing the decrease in unit cost. The average unit airframe cost fiscal 1982 was $17.4 million; and in fiscal 1985, it was $14.8 million. This is the airframe CFE line, the one that you pay to the prime contractor. Those are then-year dollars. That is a 15 percent decrease.

Mr. McDade. How did you do that?

Admiral Wilkinson. Again with change control, tough negotiations, really holding the contractors' feet to the fire. Elimination of goldplating, a lot of work in this area, primarily in the newer programs. Pushing for reliability, ensuring we have good warranties, pushing for quality, and we find out that quality doesn't necessarily mean you are going to have a higher cost.

I think many of our contractors are now beginning to understand that if you have a quality process, you produce a quality part the first time, you will do it at a lower cost, and make more money. Those are some of the things we are doing, sir.

Mr. McDade. Again, congratulations. It is a very interesting dissertation because we have heard about the policies you have implemented regarding change orders in engineering and the procedure, and it is interesting that you single out that particular one as the primary one.

Admiral Wilkinson. That is one of a number of things we are doing. I would say that is a very important one, but I think the tough negotiations and, of course, the competition is the keystone of it all.

TRAINING AIRCRAFT

Mr. McDade. Admiral, you make some tough decisions with respect to training aircraft. Do you want to tell me about that a bit, please? There is a very substantial cut there. Are you comfortable with that cut?

Admiral **Martin**. Sir, I am never comfortable with cuts, but we have learned to manage. I was the former Chief of Naval Air Training some five years ago, and we need training aircraft. We must insure that we manage our training assets to produce the pilots and flight crews necessary. We made these cuts recognizing we had to use some very austere management programs in order to provide sufficient training aircraft that would have otherwise been accommodated without these cuts. I feel we can do this at this time, since it is also equally important that we maintain our combat capability, perhaps more so, not perhaps more so, but more so.

Our ability to train is on track, with our new system, the T-45/TS, coming down stream, and the ability to reorient our training aircraft to their training mission rather than providing services and substituting contract services. For example, we have several companies that provide contract flight services instead of using our former A-4 training airplanes. By these types of management actions we can accommodate this shortfall, but we are also creating a bowwave out into the future, because we are going to have to make up for these shortfalls at some point in time, or spend a tremendous amount of money on modifications and spare parts to keep the airplanes operating, as they get older.

A-6 AND F-14 UPGRADE

Mr. **McDade**. Admiral, let's talk about the A-6 and the F-14. Your budget request includes 11 A-6E's. When do you intend to request funds for the A-6F, the upgrade, medium attack aircraft?

Admiral **Martin**. It starts in 1988 for the A-6F, sir. That is what we intend to request.

Mr. **McDade**. Will you briefly describe what will be included in the upgrade, and the status of the ongoing work.

Admiral **Martin**. Yes, sir.

The A-6F will incorporate state-of-the-art technology which will provide improved reliability and maintainability and will have a lot of off-the-shelf digital avionics. It will be essentially the same avionics that we will have in the F-14D and the F/A-18; commonality being a goal here, a new engine, off the shelf engine that we will have in that, the F-404 engine. The survivability of this aircraft will be improved markedly in terms of fire and explosion suppression.

We will improve the standoff targeting capability of the airplane, we make significant improvement in weapons system performance by incorporating a very high resolution radar. An air-to-air capability for the A-6.

Although the A-6E is a marvelous airplane, the A-6F will be an improvement upon that. The A-6 is the only long-range, low-level, deep-strike interdiction aircraft that is truly all weather in the free world today, with the exception of the F-111. The A-6 airframe itself may be 1950s technology, but all of the upgrade modifications that we have put in it through the years and then coming on with the A-6F with a redesigned wing and a whole host of new systems, will provide a capability to continue with this low-level, all-weather strike capability into the next century. Eventually we hope to replace the A-6 with the ATA, the Advanced Technology Aircraft.

Mr. McDade. Can you tell us what degree of commonality will there be between the A-6E and A-6F?

Admiral Martin. I will do that for the record, sir, because we are trying to change the avionics to a digitalized system, so we are not striving for the commonality in A-6E and A-6F. We are striving to improve the A-6F.

[The information follows:]

Approximately one-third of the A-6E will be common with the A-6F. Although the engine and airframe will be different, 67 out of 195 avionics equipments and the composite wing will be common both the A-6E and A-6F. Overall A-6F commonality is as follows:

Avionics commonality.—117 common WRA's with F-18/F-14; 67 common WRA's with A-6E; 94% overall WRA commonality.

Engine commonality.—F404D 99% parts common with basic F-18 engine; Convert from F-18 to A-6F configuration in 4 hours.

Wing commonality.—100% common between A-6E and A-6F; Common Wing attachment bulkheads for A-6E and A-6F.

Fuselage commonality.—Modified A-6E forward fuselage (for radar and engines); modified EA-6B aft fuselage (for new wing/equipment).

Other commonality.—Navy common ejection seat (when available); On board breathing oxygen generating system.

Mr. McDade. What do you expect the unit cost of the A-6F to be next year?

Admiral Martin. Recurring flyaway costs for the A-6E will be $23.3 million, sir.

Mr. McDade. You are also in the process of a major upgrade to the F-14.

Admiral Martin. That is correct, sir.

Mr. McDade. Could you tell us, Admiral, what is involved briefly with the upgrade, and give us a status report.

Admiral Martin. The first F-14 aircraft in the 1986 buy, is going to incorporate the GE F-110 engine. Now for the first time this aircraft will be able to be flown—aerodynamically—to the full capability of the airframe. Heretofore, it has been limited by the TF-30 engine. So we will have what we will call F-14A plus, and that is essentially the F-14A airplane we have today with the F-110 engine in it.

Then we will have the F-14D, which will come downstream. This is the major upgrade of which you are speaking. The major improvements in the F-14D will be in terms of its operational capability, reliability and maintainability. Similarly it will have the F-110 engine in it. It is going to have maximum commonality with the F/A-18 and the A-6F. It will have integrated digitalized avionics, with the capability of having the joint JTIDS program, the Joint Tactical Information Data System and the ASPJ or Airborne Self-Protection Jammer.

It will have the infrared search and track systems, capability for the advanced medium-range air-to-air missile, laser technology.

Mr. McDade. You have convinced me. Put the rest of it in the record.

Admiral Martin. Yes, sir. We will put a description in the record It is going to be a marvelous airplane, sir.

[The information follows:]

AVAILABLE

The F-14D is a major radar and avionics block upgrade of the present F-14A weapon system, building on the concurrent engine upgrade effort of the F-14A(PLUS) program. The F-14A(PLUS) program will replace the current TF-30 engines with a marinized version of the USAF F110 engine. The F110 will provide warranted, stall-free operation throughout the entire F-14 flight envelope. A nominal 30 percent thrust increase will allow military power catapult takeoffs. Further, this higher thrust will provide significantly improved maneuvering capability in combat scenarios and a single engine military power wave-off capability. Increased intervals between Hot Section and Cold Section repair cycles and deletion of installed engine trim requirements will significantly increase engine reliability and maintainability. Other improvements in operability include reliable afterburner ignition under all conditions and no visible exhaust signature.

The Avionics Upgrade to the F-14D will consist of a modern digital, multiple bus architecture and incorporate highly reliable, state-of-the-art avionics equipment. Two AN/AYK-14 Navy standard computers provide redundant processing and bus control funtions. Dual display processors provide cross-coupled redundancy for programmable three color chroma-color displays and a programmable HUD. Integration of an F/A-18 modified digital stores management system provides effective inputs to a MIL-STD-1760 standard weapons interface. New common avionics include the ALR-67 radar warning receiver, the ALQ-165 airborne self projection jammer [ASPJ], and the USAF common joint tactical information distribution system [JTIDS]. ASW-27C will be installed to provide an anti-jam link 4 data link with a fighter to fighter net. For commonality and improved reliability, F/A-18 common communication, navigation, and identification avionics are being integrated. The joint USAF/USN infrared search and track [IRST] system will be integrated to provide long range passive air-to-air target detection capability.

The radar upgrade to the F-14D has been structured to retain the high peak power output ———.

A-6 AIRCRAFT

Mr. McDade. Let me come back to this, because it has been drawn to my attention that maybe that figure on the A-6 was not completely accurate.

Admiral Martin. That was A-6E, sir.

Mr. McDade. You are saying the A-6E?

Admiral Martin. Yes, sir.

Mr. McDade. Will you give us also the A-6F?

Admiral Martin. In 1988, the unit price of the recurring flyaway cost will be $32.2 million.

Mr. McDade. That is a pretty substantial increase between the figures. To what do you attribute that, Admiral? Somewhere around $10 million.

Admiral Wilkinson. It is the first year of that configuration, so it is going to start off high. We are quite confident within about 3 or 4 years this is going to be right down very close to the price of the current A-6E.

Mr. McDade. Is it going to be competitive?

Admiral Wilkinson. Not the basic A-6, no, sir. We will be competing a lot of the equipments that go in it.

Mr. McDade. That is one of the things that we want to hear.

Admiral Martin. A new radar in that airplane will be one of the big cost drivers. I didn't mention this previously, but we are putting a new radar in the A-6F. That is going to be a significant improvement.

Mr. McDade. In the A-6? What percentage of the cost is the radar? Do you know?

Captain Buehler. It averages $2.5 million. It runs down to and tapers off at about $2.2 million by the end of the first three option years.

Admiral Wilkinson. As you probably know, we have already competed the wing for the A-6 aircraft so that has already been competed. We have long-term, not-to-exceed prices.

Mr. McDade. If there are any others, amplify it in the record so we can get a picture of what you are doing.

[The information follows:]

Additional items which have been or are being competed are as follows: The F404 engine, cockpit displays and processors (fixed price options have been obtained), autopilot, converter interface, the AYK-14, and ASN-139, and the new ejection seat.

F-14D AIRCRAFT

Mr. McDade. Back to the F-14, the fiscal year 1988 procurement is reportedly a split buy of F-14A plus and F-14Ds. Is there some reason why in fiscal year 1988 you won't procure all F-14D's?

Admiral Wilkinson. We are just not going to be quite ready to put the new configuration in by the first of the year. About halfway down the year we will be ready for the configuration.

Mr. McDade. Halfway in the year?

Admiral Wilkinson. Yes, sir; five F-14A pluses.

Mr. McDade. Why not wait six months and buy the F14-D? We are talking about a small period of time here, aren't we?

Admiral Wilkinson. Yes, sir.

The only problem with doing that is that it increases your unit cost considerably, to sustain a gap, and we are trying to get enough of these F-14 a plus aircraft, with the new engine so we have a viable quantity to use in the fleet, and we will have a total of 70 of those as I recall with both forward fit and retrofit, so we need that quantity of aircraft to have a viable community of one configuration.

Mr. McDade. We are having a little bit of a problem about the time, the short period of time that would elapse between the beginning of the buy of the F-14D, so take a look at it, please, and notify the committee, and then amplify it in the record, would you?

Admiral Wilkinson. I would be happy to.

[The information follows:]

Under the terms and conditions of the F-14D contract, the first F-14D production aircraft is scheduled for delivery in March 1990. The feasibility for earlier delivery was studied by the Navy and Grumman and found to be unacceptable because of the short development time and high degree of concurrency built into the F-14D schedule already. In addition, Commander Operational Test and Evaluation Force [COMOPTEVFOR], the Navy's independent operational tester, has made it clear that the amount of testing that will have been conducted prior to OT-IIA is the absolute minimum acceptable for COMOPTEVFOR to support Milestone IIIA, the pilot production decision point for the first F-14D aircraft which will deliver in March 1990.

Furthermore, we have a firm requirement for a total of seventy F-14A(PLUS) aircraft. Therefore, since March 1990 is the earliest feasible delivery of an F-14D, the most cost-effective strategy is to produce five F-14A(PLUS) aircraft for the October 1989 through February 1990 deliveries.

To do otherwise would create a five month gap in the production line, significantly raising the unit cost of the F-14D, and we would still have a requirement to produce or to retrofit five F-14A(PLUS) aircraft to fulfill the requirement.

Admiral Martin. I would suggest it is a phase-in issue. You have to phase in someplace.

AVAILABLE

Mr. McDade. Yes; but if it is only six months or maybe even a little more than that. The question is why not get the newer models?

Admiral Martin. We also need the A-plus in the fleet as well.

F-14 UPGRADE

Mr. Magliocchetti. Admiral. Will these aircraft, the F-14A-pluses, eventually have to be modified to the D configuration?

Admiral Martin. I would say not for many years, upwards of 15 to 20 years. Normally we would take the older F-14s, and start that modification earlier. Those which have sufficient fuselage fatigue life remaining on them. We would start modifying the older ones first, and you have to place this thing in a sliding program. It makes good sense to me when you cut off your A-plus that those airplanes will be the last A-pluses that would be in service ever. Eventually, and conceivably, they could be modified, but not for a number of years.

Mr. McDade. Can you give us the estimated unit cost of a fully upgraded F-14? What is your estimate on that, a fully upgraded F-14, estimated cost?

Admiral Martin. For F-14D. Let us supply that for the record, sir, because you must understand that when you initially procure these, the unit cost is going to be higher, and then the curve drops down relative to time and numbers of aircraft procured. We will have to take the total program and average unit cost for that to be a meaningful estimate, in my opinion.

Mr. McDade. We want that meaningful estimate, so give us that.

Admiral Martin. Yes, sir.

[The information follows:]

The average recurring unit flyaway cost of the F-14D over the planned procurement of 304 aircraft is $29.7 million in constant fiscal year 1984 dollars.

F-14D VS. F-14A-PLUSES

Mr. Magliocchetti. Admiral, would you also include the cost of procuring all F-14Ds for fiscal year 1988 as compared to the split buy of A-pluses and the Ds?

Admiral Martin. Mr. Magliocchetti, I understand you are asking for the cost of doing all F-14D's?

Mr. Magliocchetti. Right.

Admiral Martin. In the fiscal year 1988 buy as opposed to doing a split buy for that year?

Mr. Magliocchetti. That is correct, the delta between those two, if you could provide that also for the record, it would be appreciated.

Admiral Martin. Yes, sir.

Admiral Wilkinson. The gapped production line.

Mr. Magliocchetti. Correct; include that.

[The information follows:]

The additional cost for procuring 12 F-14D's in fiscal year [FY] 1988 instead of 5 F-14A(PLUS) and 7 F-14D's is estimated to be $114 million in APN-1 for FY 1988 and an additional $2.4 million in APN-1 in FY 1989. These estimates include the cost of the upgraded configuration from F-14A(PLUS) to F-14D, the cost of a five month gap in the production line, and the increased escalation associated with the later delivery schedule.

In addition to the APN-1 increases. $49 million in FY 1988 APN-5 funds and $18.6 FY 1989 O&MN funds are required for retrofit of five additional F-14A aircraft to F-14A(PLUS) aircraft. These additional funds are required to obtain the 70 F-14A(PLUS) aircraft which are required to outfit and support two airwings.

Mr. McDade. Thank you, Mr. Chairman.

T-45 TRAINER

Mr. Murtha. The T-45 trainer aircraft, the request this year includes $56.4 million in advanced procurement funding for the T-45 trainer. Next year's estimate for 12 aircraft is an additional $340.4 million. Will all of these aircraft be carrier-capable trainers?

Admiral Wilkinson. Yes; indeed. They will be carrier capable.

Mr. Murtha. What percentage of commonality is there between the British Hawk and the T-45 trainer?

Captain Marshall. I am Captain Marshall, program manager for the T-45.

Approximately 50 percent of the T-45 airplane parts—by weight—are common to the Hawk. It is important to say that the entire aircraft will be assembled in the United States.

Mr. Murtha. The procurement unit cost estimate for next year's procurement amounts to $33 million. How do you justify a cost of this magnitude for an off-the-shelf trainer?

Captain Marshall. That cost includes many more things than the 12 aircraft. There are two simulators, an operational flight trainer, an instrument flight trainer, a number of computer-assisted instruction devices, a training integration system, and all nonrecurring cost with the production start up of the program. All of this gear is required to be in place in 1990 at our first site at NAS Kingsville, Texas, so it isn't accurate to merely divide that quantity by 12 and conclude that that is the price of the aircraft. It is the price of the whole training system, and the budget line item labeled T-45/TS stresses the requirement for a complete training system.

Mr. Murtha. What is the cost of this airplane after these nonrecurring costs are taken out?

Captain Marshall. We have calculated the cost over the 300 aircraft buy, and we have an agreement with the contractor. It will be in a band between $6.1 million and $6.7 million. That is constant 1984 dollars for the aircraft, so it is a very economical training aircraft.

Mr. Murtha. Have you negotiated fixed prices for the first several production lots, and if so, would you outline these for the committee and provide the details for the record.

Captain Marshall. We can provide the details for the record. We do have an agreement, a price agreement with the compnay for the fiscal year 1988 buy of 12, the fiscal year 1989 and 1990 buys of 24 apiece, for those first 60 aircraft, plus all of the associated training equipment, which, in this case includes 4 IFT simulators, 11 OFT simulators, and the other ground training equipment. The total price agreed to is $1.337 billion. We will provide the year-by-year spread, as you request, sir.

[The information follows:]

We are in the final stages of negotiations with the contractor for not-to-exceed [NTE] prices on three years of production options. The contract stipulates that each option will be definitized on a firm fixed price basis. This will include 60 aircraft, 15 flight simulators, required quantities of the remaining ground training system and logistics. These are the system elements which are required to establish the first training site at NAS Kingsville, Texas in FY-90. More details on the contractual arrangements can be provided after negotiations are complete. However, we have reached NTE price agreement with the contractor for these options as follows:

Contract NTE Values

	Millions
Option 1: Fiscal year 1988	$429.6
Option 2: Fiscal year 1989	455.6
Option 3: Fiscal year 1990	451.8

Mr. MURTHA. What is the current estimated program cost for the T-45 program, and how does that compare with your prior year estimates?

Captain MARSHALL. The current total program cost, R&D plus procurement, is now of the order of $4.8 billion. It was $4.5 billion last year. That is a figure which was deliberately low, because the Navy made a conscious policy decision to stringently fund the procurement until we had gotten the contractor to agree to these not-to-exceed costs.

We have since obtained that cost agreement in the fall. The President's budget reflects the total program cost associated with the agreement.

Mr. MURTHA. Any other questions, Mr. McDade?

Mr. MCDADE. No questions, Mr. Chairman.

Mr. MURTHA. Please answer the rest of the Committee questions for the record.

[CLERK'S NOTE.—Questions submitted by Mr. Murtha and the answers thereto follow:]

CONGRESSIONAL DIRECTION ON F-16 AIRCRAFT

Question. The Committee raised its concerns, last year, over the possibility of prematurely finalizing the procurement of F-16 adversary in fiscal year 1986 which would gap production thus resulting in higher costs for the aircraft. Your plans do not show any F-16 procurements in this or the following year. Have you adjusted your requirements for supersonic adversary aircraft, and if not, when do you anticipate purchasing the additionally required planes?

Answer. Navy requirements have not changed; we still need forty-eight supersonic adversary aircraft. F-16 procurement was discontinued in order to allow Navy to fund other, higher priority aircraft procurement programs. We will request additional adversary training aircraft when we can do so without sacrificing Navy deployed warfighting capabilities.

Question. Have you finalized your contract for the adversary aircraft, and if so, what is the unit cost, and how does that compare to both your original estimate and the contractors not-to-exceed estimate?

Answer. No, updated certificate of pricing is to be submitted in late March or early April by General Dynamics. Definitization of the contract is expected to occur approximately June.

DIRECT MANUFACTURING MANHOURS

Question. Provide for the record your original estimates of manhours it has taken, along with outyear projections, to build the F/A-18 aircraft, and the CH-53E, SH-60B, CV Variant, V-22 and the VH-60 helicopters.

Answer. The following provides estimates for the airframe of actual direct manufacturing manhours where available and projections for outyears. This information is considered to be contractor sensitive and should not be released to the public. No information is provided for the V-22 program, as it is premature at this time to provide an estimate on the manhours. The program does not begin until fiscal year (FY) 1989.

[In thousands]

	Direct Mfg Hrs Per A/C
Fiscal year:	
CH-53E:	
1977	
1979	136 actual
1980	79 actual
1981	63 actual
1982	56 actual
1983	53 actual
1984	51 actual
1985	[1] 55 estimate
1986	[1] 56 estimate
1987	[1] 63 estimate
1988	61 estimate
1989	60 estimate
1990	59 estimate
Fiscal year:	58 estimate
F/A-18:	
1979	
1980	343 actual
1981	186 actual
1982	99 actual
1983	80 actual
1984	63 estimate
1985	57 estimate
1986	52 estimate
1987	49 estimate
1988	46 estimate
1989	44 estimate
1990	43 estimate
1991	41 estimate
1992	40 estimate
Fiscal year:	39 estimate
SH-60B:	
1982	
1983	53 actual
1984	41 actual
1985	37 estimate
1986	33 estimate
1987	31 estimate
1988	29 estimate
1989	28 estimate
1990	27 estimate
	26 estimate

Fiscal year:	*Direct Mfg Hrs Per A/C*
SH-60B:	
1991	25 estimate
1992	25 estimate
1993	24 estimate
1994	24 estimate
1995	23 estimate
Fiscal year:	
SH-60F:	
1987	40 estimate
1988	34 estimate
1989	31 estimate
1990	30 estimate
1991	29 estimate
1992	28 estimate
1993	27 estimate
1994	27 estimate
1995	26 estimate
1996	26 estimate
1997	25 estimate
1998	25 estimate
Fiscal year:	
VH-60:	
1986	40 estimate

[1] Increase in manufacturing hours is incurred because of the time phasing return of various composite components to the prime contractor for manufacture; each action was supported by a favorable economic make or buy analysis.

A-6 AND F-14 UPGRADE

Question. What percentage of commonality will there be between the A-6E and the A-6F?

Answer. Approximately one-third of the A-6E will be common with the A-6F. Although the engine and airframe will be different, 67 out of 195 avionics equipments and the composite wing will be common to both the A-6E and A-6F. Overall A-6F commonality is as follows:

Avionics commonality.—117 common WRA's with F-18/F-14; 67 common WRA's with A-6E; 94% overall WRA commonality.

Engine commonality.—F404D 99% parts common with basic F-18 engine; Convert from F-18 to A-6F configuration in 4 hours.

Wing commonality.—100% common between A-6E and A-6F; Common Wing attachment bulkheads for A-6E and A-6F.

Fuselage commonality.—Modified A-6E forward fuselage (for radar and engines); modified EA-6B aft fuselage (for new wing/equipment).

Other commonality.—Navy common ejection seat (when available); on board breathing oxygen generating system.

Question. What efforts are being made to reduce the cost of the aircraft?

Answer. Not-to-exceed production options for the airframe/CFE were negotiated with the airframe contractor for the first three years of production. This effort was achieved before the completion of the A-6F Scale Development. Additional efforts to reduce costs are centered in the competition of a major portion of the avionics equipment as well as seeking commonality with the F-14 or F-18 in the following systems: the F404 engine, multi-function cockpit displays, the Heads-Up Display, the AYK-14 Navy standard computer, the Stores Management System, the two-way data link (ASN-27) and the Signal Data Recording System (records maintenance data).

Question. Have you obtained fixed price options for the first production lots?

If so, can you outline the prices you obtained?

If not, do you intend to pursue this type of contract?

Answer. Not-to-exceed production options for A-6F airframe/CFE were negotiated with Grumman Aerospace Corporation. These options include the cost of the new, high-resolution radar. The following prices were negotiated:

[Dollars in millions]

	Fiscal year—		
	1988	1989	1990
Quantity	12	18	24
Airframe/CFE-unit cost	$21.5	$18.9	$17.4

Question. Is the engine upgrade proceeding ahead of the avionics upgrade, and if so, which aircraft will begin receiving the F110 engine?

Answer. Yes; the engine upgrade, designated the F-14A(PLUS), is proceeding ahead of the avionics and radar upgrades. The early requirement for the F-14A(PLUS) was directed by the Secretary of the Navy because of the safety and operability problems associated with the TF-30 engine. As directed by the Congress, F110 engine incorporation will commence with the first F-14 aircraft of the FY-86 buy which delivers in November 1987.

Question. Is the upgrade of the avionics proceeding on schedule and within cost?

Answer. The F-14D full-scale development which includes the engine, radar, and avionics upgrades is proceeding on cost and schedule for a first F-14D delivery of March 1990. The firm fixed price FSD contract will continue to ensure that the program remains on cost.

ANTI-SUBMARINE WARFARE [ASW] HELICOPTERS

Question. The authorization conferees directed the Navy to review and report by January 15, 1986 on alternative ASW helicopter/ship systems.

What did your report on alternative ASW helicopter/ship systems conclude, and what actions do you intend to take?

Answer. Our report states the most desirable alternative is an upgrade to the existing SH-2F system using modern equipments in production for other platforms. The magnitude of the modernization program is still under review. Our current program is to commence an upgrade to 42 SH-2F's in FY 1988.

Question. Does your request include funds to support the alternatives selected by the Navy, and if not, when can we expect a funding request?

Answer. The Navy has directed that the six FY 1987 production aircraft receive as many of the upgrades as can be accommodated within the production appropriation.

Question. It has been reported that the Secretary of the Navy "may press for two ASW helicopters per ship" based on your recent experience in the Mediterranean. Are these reports accurate?

Answer. Navy planning for the LAMPS MK III SH-60B helicopter employment is for each squadron to deploy approximately one third of its detachments with two aircraft. This planning was done prior to SH-60B fleet introduction. There are no plans to change the current mix of two and one aircraft detachments per squadron.

Question. Can you briefly describe for us your recent experiences in the Mediterranean?

Answer. The LAMPS MK III system has met or exceeded all operational expectations. System availability, reliability and capability goals are being met for the initial deployments. Submarine contacts are being ———. Additionally the MARK III/SQQ-89 system has proved itself extremely capable in the ASW and ASST role.

Question. There have been substantial cost reductions in the SH-60B helicopter program over the past few years. Your FY 1984 procurement plan called for 18 aircraft per year through 1988. This plan has been drastically reduced with this year's request calling for 17 aircraft and six per year through FY 1990. What was the basis for your decision to reduce the quantity of SH-60B's since this surely is not an economical way to procure these helicopters?

Answer. This is an affordability issue. In order to obtain a balanced program and after careful examination of total Navy requirements, constraints on the SH-60B and SH-60F were established to provide a combined total of 24 aircraft per year. The SH-60F is programed at seven aircraft in FY 1987 and 18 per year for FY 1988 through FY 1990. The urgency for the SH-60F is greater than that for the SH-60B through 1990.

Question. Navy officials have advised us that because of slippage in the backfit program and the upfront procurement of training attrition and pipeline aircraft there is currently an excess of aircraft. Did this have anything to do with reducing your request?

Answer. Yes; this was one of the considerations in giving priority to the SH-60F through 1990.

Question. What are the cost penalties associated with procuring these smaller quantities?

Answer. As the quantity decreases from 17 in fiscal year (FY) 1987 to six in FY 1988, the recurring flyaway cost increases from $12.2 million to $15.0 million, a $2.8 million increase. This increase is due to the quantity decrease. Initiatives are underway to hold down the FY 1988 cost however, and should be reflected when the FY 1988 budget is submitted.

Question. Does your total SH-60B requirement remain at ——— aircraft? Are you anticipating any changes to your total inventory requirement?

Answer. Yes; the SH-60B procurement requirement of ——— remains unchanged. The current LAMPS MK III ship inventory does not require additional Sh-60B aircraft.

Question. There were serious problems during the early years of the SH-60B program. One of the actions taken to reduce cost was to downgrade the anti-ship surveillance and targeting [ASST] mission to some extent. Recently, the Committee has been advised that the Pacific fleet apparently used the ASST capabilities far more extensively than anticipated. Do you foresee a much greater use of the ASST capabilities now that you are getting more experience with the SH-60B?

Answer. The results of the first deployments were skewed towards the ASST mission because the LAMPS MK III aircraft is designed to be used with an SQR-19 TACTASS equipped ship. The first deployment ships were not equipped with TACTASS tails. Later deployments will represent a close balance between ASW versus ASST mission profiles. While the LAMPS MK III system provides increased ASST capability we expect the LAMPS MK III primary mission to remain ASW.

Question. This Committee has strongly endorsed the T-700 upgrade for the SH-2F. Could you give us a status report on this effort?

Answer. The initial prototype feasibility testing of the T-700 engine was successfully completed in FY 1985. Performance and technical predictions were met. Drive train production qualification tests are in progress and will complete in FY 1987.

Question. Will this year's procurement be the upgraded version of the SH-2F with the T700?

Answer. No; the incorporation of the T700 would require additional funds and would delay scheduled delivery of the production aircraft.

Question. The Committee has been advised that the Navy is considering a major upgrade program for the SH-2F, which includes a new engine, avionics, and improved ASW capability. Could you briefly, outline your future plans for the SH-2F?

Answer. The SH-2F will remain in primary ASW sensor on over 80 surface combatants through the year 2000. Our plan is modernize 42 aircraft. Modernization of the remaining SH-2F inventory during a planned Service Life Extension Program is being reviewed.

Question. What is the estimated cost associated with this upgrade?

Answer. A cost of $312M for procurement of modernization kits, initial spares and installation of kits is projected.

Question. When can we expect to see a budget request for the SH-2F upgrade?

Answer. The Navy is currently projecting an FY 1988 budget request for the SH-2F upgrade.

Question. Will this upgrade program be competed?

Answer. Yes; the Navy plans to conduct a full and open competition for the SH-2F upgrade.

CH-53 MULTIYEAR PROCUREMENT

Question. Last year, you were in the process of negotiating the engineering change proposal for the MH-53 minesweeping helicopter. Have you completed these negotiations, and if so, what is the actual cost delta between the CH-53 and the MH-53?

Answer. Negotiations for the MH ECP, recurring and nonrecurring costs, completed in February 1986 with definitization expected in March. The MH unit recurring delta over the unit CH price for FY 1985 was negotiated at $3.4 million.

Question. How does that compare with your original budget estimates?

Answer. The FY 1987 Congressional Budget reflects a delta of $2.9 million for FY 1985. The first two production MHs incurred a higher than anticipated initial sustaining engineering cost, which will diminish in future lots.

Question. You were also in the process of completing the negotiations for a non-recurring cost contract. Have you completed these negotiations, and how do they compare with your original budget estimates?

Answer. The nonrecurring portion of the ECP was negotiated at $28.6 million vice $30.0 million budgeted for that effort in FY 1984 and FY 1985.

Question. Have you completed your negotiations on the CH-53E multiyear procurement, and if not, when do you anticipate finalizing the contract?

Answer. No; negotiations for the multiyear contract are not complete; definitization is expected in June 1986.

Question. Japan has expressed an interest in purchasing MH-53 aircraft. Has this progressed beyond the interest stage?

Answer. Japan is pursuing the purchase of MH-53E aircraft, but currently there is no contractual commitment.

Question. Does you budget request assume any foreign sales?

Answer. No; when a foreign sale is firm the Navy will ensure that it receives the cost benefits of increased production quantities.

Question. What would be the cost impact on your multiyear procurement?

Answer. Japan is contemplating a procurement of four aircraft during the period of the U.S. Navy multiyear buy. Such a production quantity increase would have a favorable impact on the unit price. However, if Japan entered into a contract immediately, the only year which would have a price benefit would be FY 1988. Forecasted delivery of the first Japanese aircraft is in calendar year 1989.

COMBAT SEARCH AND RESCUE HELICOPTERS

Question. Congress in the last two years has provided funds, in the amount of $37 million, above your budget request, to procure Combat Search and Rescue Helicopters for the Naval Reserve. Last year our conferees directed that you combine both FY 1985 and FY 1986 funds and compete this program in an attempt to get a more economical purchase. What is the status of this procurement?

Answer. The Naval Reserve Combat Search and Rescue Special Warfare Support (HCS) Helicopters are being procured through a full and open competition. A Request for proposals (RFP) was released on 27 February 1986. Initial proposals are due 28 April 1986.

Question. It has been reported that the Coast Guard procurement of medium-lift helicopters may be combined with the Navy's procurement. Are these reports accurate?

Answer. The Coast Guard Medium Range Recovery (MRR) Helicopter requirements are almost identical to the HCS Helicopter performance requirements. The Coast Guard has documented their intention to join the Navy HCS Helicopter program to satisfy their MRR requirements. Provisions have been included in the HCS Helicopter RFP to cover MRR requirements as soon as a final Coast Guard decision is made.

Question. When do you anticipate awarding a contract?

Answer. The award is scheduled for September 1986.

Question. Your budget justification documents state that the V-22 "will provide an aircraft to meet the Combat Search and Rescue needs of the Navy." This appears to be a duplication of requirements. Can you explain the relationship of these procurements?

Answer. The HCS Helicopter Program meets an urgent operational need for an interim Combat Search and Rescue Mission vehicle until the Navy V-22 is fully operational in the late 1990's. When the V-22 is fully operational, the HCS Helicopter will augment the V-22 in single-spot ship and short-range operations.

F/A-18 COMPETITION

Question. Your budget justification states that you plan to compete the F/A-18 program as well as make it a multiyear candidate. The Secretary recently stated that all options are being considered. Could you explain how, and when, you would finalize the F-18 strategy?

Answer. Many options for executing this procurement strategy are currently being explored. All continue to take advantage of the Navy's success in competing the F/A-18 against alternative airwings as well as the excellent performance of the prime contractor, McDonnell Douglas, and its major subcontractor, Northrop.

The options we are exploring take advantage of the productivity and manufacturing management initiatives exhibited by these contractors in bringing down the price of the F/A-18. The Navy plans to exploit these advances by buying out the program at a faster rate. We also are exploring Northrop interest in competing against McDonnell Douglas for final assembly of the F/A-18, an effort we assume they both have the capability of doing.

We are already exploring the options mentioned above to be able to award an advance acquisition contract in early 1987.

Question. Could you tell us what portion of the Navy's F/A-18 budget request supports competition and multiyear procurement?

Answer. The FY 1987 budget assumes a five year competitive multiyear procurement of the F/A-18 commencing in FY 1988. The advance procurement budget for FY 1987 has been increased by $179.7M to finance long lead material required for this effort. No other funds have been included in the FY 1987 budget for a competitive multiyear procurement.

Question. It was recently reported that the F/A-18's current prime contractor has offered the Navy a unit price of $18.5 million for the F/A-18. Has such an offer been made, and if so, could you briefly describe the details?

Answer. The McDonnell Aircraft Division (McAir) of McDonnell Douglas Corporation has not yet submitted a proposal to the Navy for its portion of the FY 1986 recurring unit flyaway cost. Based upon the results of the FY 1985 negotiations with all prime contractors, the F/A-18 was able to achieve a FY 1985 recurring unit flyaway cost of $18.7M. If FY 1986 negotiations are similarly successful, the FY 1986 recurring unit flyaway cost is projected to be $18.9M.

Question. What quantities is this offer based upon?

Answer. No offer has been received from McAir. However, we plan to acquire 84 aircraft for the U.S. Navy and Marine Corps in FY 1986. In addition 55 F/A-18's will be sold to FMS customers.

Question. Could this change your mind on whether you would complete the program?

Answer. No offer has yet been received from McAir, but the Navy plans to take advantage of all cost reduction initiatives which will reduce the price of the F/A-18.

MODIFICATION OF AIRCRAFT

Question. The Appropriations Committee conferees provided a total of $396.1 million for P-3C modifications, which was $243.2 million above your FY 1986 request. The additional funds provided are intended to procure additional Update III modification kits and AQA-7 systems with expanded channel capacity. What action has been taken to date in this regard?

Answer. All required procurement actions are proceeding toward definitized firm fix price contracts, and actual contract awards are contingent upon authorization of funds.

Question. Provide specific details and milestones for the record.

Answer. The Navy received a firm fixed price proposal from Lockheed California Company for the additional 33 Update III modification kits. The P-3 program office issued the decision memorandum (March 1986) initiating all required engineering and programmatic actions. In addition, actions are proceeding with the technical definition of the AQA-7 expanded channel capacity processor. Two reviews have been held with contractor (Magnavox) to date.

Question. Last year, the Navy testified that the modification to improve AQA-7 display program was on track, and that a contract would be signed in December. Has the contract been signed, and if not, what has caused the delay?

Answer. The contract for the improved AQA-7 display was signed 6 December 1985.

Question. What is the status of the Penguin missile program, particularly as it relates to integration on the SH-60B helicopter?

Answer. The Penguin missile program is ongoing with full scale development (FSD) contracts awarded to Kongsberg Vapenfabrikk [KV] of Norway for missile development and to the IBM Corporation and Sikorsky Aircraft for SH-60B helicopter intergration. IBM and Sikorsky FSD contracts were awarded in September 1985 and the KV contract was awarded in January 1986. Contracts for procurement of the necessary structural and wiring provisions in the SH-60B have been awarded so that the last 115 aircraft off the production line will be capable of having Penguin kits installed.

Question. Does your request include funds for this program?

Answer. The fiscal year (FY) 1987 appropriation request includes $17.7 million in RDT&E,N under Program Element 64212N for Penguin development, of this amount $1.2 million is budgeted for integration of the missile on the SH-60B helicopter.

Question. When can we expect to see SH-60B carrying Penguin missiles?

Answer. Operational testing of a Penguin missile capable SH-60B will commence in April 1988. The SH-60B's procured with FY 1989 funding will have Penguin kits installed and have the capability to deploy with the Penguin missile.

Question. In November 1985, a Navy C-131 crashed during a post maintenance flight check and three members of the flight crew were killed. The maintenance work was done by Hayes International Corporation. On December 17, 1985, "cure" letters were sent to Hayes because of the high number of quality deficiencies in connection with a number of Navy contracts. In this regard, can you tell us the status of the C-9 Standard Depot Level Maintenance?

Answer. A contract for C-9 was awarded to Boeing, Greenville, Mississippi on March 11, 1986. A bilateral agreement with Hayes International Corporation resulted in expiration of contract N68520-86-D-0111 on March 13, 1986.

Question. When was the contract awarded?

Answer. The C-9 contract N68520-86-D-0111 to Hayes was awarded on October 4, 1985. The previous C-9 Standard Depot Level Maintenance contract was also with Hayes.

Question. How does the quality of this work compare to other maintenance contracts?

Answer. The total of customer reported defects on aircraft delivered by Hayes was 12.9 times higher than other commercial contractors. Critical (safety of flight) reported defects were 4.9 times higher than other commercial contractors. This was based on fiscal year 1985 statistics.

Question. I understand the USAF C-9 was the first airplane to go through this maintenance—were they satisfied?

Answer. The U.S. Air Force was not satisfied with the quality of the C-9's being produced by Hayes. The first aircraft delivered had 40 defects which should have been discovered and corrected by Hayes. The Air Force in a February 12 message stated "We would appreciate any assistance you, Naval Aviation Logistics Command, can give us in resolving the continuous "Quality" problem we are encountering with our Planned Depot Maintenance aircraft". They fully supported the actions taken by the Navy.

Question. When was contract N68520-86-D-0111 awarded?

Answer. Contract N68520-86-D-0111 was awarded on October 4, 1985.

T-45 TRAINER AIRCRAFT

Question. The procurement unit cost estimate for next year's procurement amounts to $33 million. How do you justify a cost of this magnitude for an "off-the-shelf" trainer?

Answer. The procurement is for a totally integrated training system (T-45TS) which includes other system elements such as flight simulators, training academics including computer assisted instruction devices, a training integration system and full logistics support (support equipment, spares, publications, etc.). The FY-88 procurement cost includes $129 million for such support to establish the first training site at NAS Kingsville, Texas in FY-90. It also includes $57 million (FY-88) for nonrecurring start-up costs. The recurring unit flyaway cost of the first twelve aircraft is $17.6 million ($14.4 million constant FY-84 $). Over time this unit recurring price will be reduced by the effects of learning and economy of scale. For example, the unit recurring flyaway cost of the 24 aircraft to be procured in FY-90 is below $10 million ($7.5 million constant FY-84 $).

Question. How much of your request is for nonrecurring costs?

Answer. The Navy estimate of the nonrecurring portion of the FY-87 advance procurement request is $31.0 million.

Question. What do you anticipate the T-45's maximum monthly production rate to be?

Answer. The planned maximum monthly rate is 4 aircraft per month beginning in FY-91. Planning for surge or increased rate production will be addressed during Production Readiness Reviews with the prime contractor and all major subcontractors beginning this summer.

Question. Will McDonnell Douglas bear the cost for tooling and test equipment as directed by the Secretary?

Answer. The contractor has agreed to invest up front in production special tooling and special test equipment (ST/STE) required for achieving and sustaining a rate production level of 48 aircraft each year through 1995. This investment will be recovered over the eight year production program on a straight line basis.

TANKER CONVERSION PROGRAM

Question. Congress provided $110,000,000 above your FY 1986 request for the tanker conversion program. Tell us how you plan to proceed with this program, particularly with respect to how you intend to maximize competition?

Answer. The Navy plans to use negotiated competitive procurement for the tanker conversion requirement with options for aircraft quantity and configuration. This will allow the marketplace to offer the optimum mix of aircraft quantity and configuration options within budget constraints. A request for information was issued via the Commerce Business Daily in Dec. 1984 and indicated that sufficient interest exists to permit a viable competition.

Question. How do you intend to deploy these aircraft once they are modified and delivered to the Navy?

Answer. The tanker aircraft will be used to refuel existing and future Navy and Marine Corps tactical aircraft at optimum air speeds and altitudes. The aircraft will be sited at NAS Point Mugu, CA, NAS Oceana, VA and Stewart AFB, NY.

MAINTENANCE PIPELINE AIRCRAFT

Question. Part of the Navy's total aircraft requirements are based on the number of aircraft needed for the maintenance pipeline. Projections for maintenance pipeline aircraft are expressed as a percent of the total inventory. Prior to 1984, the Navy overhauled their aircraft on cycles which were expressed in numbers of months between overhauls. However, since 1984, aircraft have been overhauled at the end of a given number of months only if the condition inspection on the aircraft concludes that overhaul is needed. This process is referred to as aircraft service period adjustment or ASPA. Under this program, such aircraft as the F-14, P-3, A-6, H-2, and H-53 are included. Since 1984, a large number of aircraft being inspected have been found to be in good condition and the maintenance is being deferred.

Has the Navy lowered its maintenance pipeline requirements for aircraft that have experienced favorable ASPA inspection?

Answer. Aircraft maintenance pipeline requirements are reviewed during annual budget formulation. Total program acquisition plans and depot level aircraft rework requirements are modified, as appropriate, based on these reviews. In general, total airframe rework requirements have declined as a result of the ASPA program although the total number of aircraft physically in depot rework hs remained essentially constant. The effect of ASPA has been the elimination of the unfunded depot level backlog portion of the total rework requirement which existed upon its implementation. The effect of ASPA on aircraft depot maintenance pipeline requirements is less clear. The total number of aircraft in the pipeline has remained essentially constant thus far, and current preliminary estimates of individual aircraft pipeline factors show both increases and decreases. While ASPA has generally increased the time between SDLMs, in some models there is an expected offsetting increase in length of time in SDLM and/or increase in unscheduled repairs.

Question. Specifically, by aircraft, how have the ASPA results affected total aircraft requirements?

Answer. The total aircraft rework requirement, which includes the unfunded backlog, has decreased since ASPA implementation, finally reaching a zero backlog and balance with available funding in FY-85 as shown:

Total requirement:	
Fiscal year:	
1982	
1983	$1,400
1984	1,314
1985	997
Funded reworks:	786
Fiscal year:	
1982	
1983	1,105
1984	820
1985	924
	786

Preliminary estimates of aircraft pipeline factor changes for those aircraft under procurement in FY-87 which fall under the provisions of the ASPA program are as follows:

	Pre ASPA estimates (1983)	Post ASPA estimates (1985)
F-14A	0.19	0.28
A-6E	.28	.21
P-3C	.11	.10
EA-6B	.20	.19
E-2C	.29	.27
SH-2F	.11	.10
CH-53E	.14	.20
C-2A	.33	.31

Question. Historical results of ASPA are now available. How did these results impact the FY-87 aircraft requirements?

Answer. The two year data base of ASPA deferral rates were utilized in formulating the FY-87 depot rework requirement. The total requirement of 1011 overhauls in FY-87 is considered the minimum based on projected ASPA material condition inspections. As yet, there has been no adjustment in aircraft procurement requirements based on ASPA results to date. Current preliminary estimates of new pipeline requirements have shown no dramatic decrease corresponding to the reduction in number of SDLMs required because of off-setting expected increases in SDLM work packages. Aircraft procurement requirements are reviewed annually and acquisition plans are modified, as appropriate, based on these reviews. Incorrect projections of aircraft program pipeline while maintaining production at economic rates are accommodated in the rate of force modernization. Lower than anticipated rates lead to faster modernization and vice versa. As the program procurement nears its end, the total buy is adjusted in reflection of actual experienced pipeline.

REQUIREMENTS FOR ATTRITION AIRCRAFT

Question. Total aircraft requirements are based on the number of aircraft needed to fill the planned squadrons, the number of aircraft needed to fill the maintenance pipeline, and the projected attrition rate for the aircraft. If the attrition rate is less than projected, the number of attrition aircraft needed will corresondingly be lower. Statistics are showing that the attrition rate for some aircraft, such as F/A-18s and AV-8Bs, is lower than expected.

What were the projected rates for current production aircraft and what are the actual attrition rates?

Answer. Projected attrition rates at the time of last definition of total program requirement and current projected attrition rates are as follows: ———.

Question. Where the attrition rate is different form projected, what impact has this had on attrition aircraft requirements?

Answer. Aircraft procurement requirements are reviewed during annual budget formulation to reflect changes in force structure and projected pipeline/attrition factors. Total program acquisition plans are modified, as appropriate, based on these reviews.

Incorrect projections of aircraft program attrition while maintaining production at economic rates are accommodated in the rate of force modernization. Lower than anticipated rates lead to faster modernization and vice versa. As the program procurement nears its end, the total buy is adjusted in reflection of actual experienced attrition to ensure that sufficient force assurance aircraft will exist through the programmed introduction of a follow-on aircraft.

FLYING HOUR PROGRAM

Question. If the flying hour program has decreased, what impact has the reduction had on engine and component requirements by type/model/series?

Answer. The flying hour program did not decrease, it increased from 24.7 to 24.9 hours/crew/month.

SPARE ENGINE REQUIREMENTS

Question. The Navy has initiated a program designed to increase aircraft engine availability by repairing them at the intermediate level of maintenance rather than at a depot. This program is called EAMP or engine analytical maintenance program. By doing this the Navy hopes to shorten the repair turnaround time for aircraft engines. The eventual goal is to have 80 percent of engines repaired at the intermediate level. When the program started in FY 1978 only 42 percent of engines were repaired at the intermediate level. Plans are to have 70 percent of the engines repaired at the intermediate level by FY 1987.

What is the current percentage of aircraft engines being repaired at the intermediate level?

Answer. The percentage of aircraft engines repaired at the intermediate level in FY 1985 was 67%.

Question. Have requirements for spare aircraft engines been reduced because of the EAMP focus on reducing engine repair turnaround time?

Answer. Programmed standard intermediate (I) Level repair turnaround times (TAT's) are utilized in the formula for spares requirements. In actuality, most engine communities have never realized standard TAT's due to material (mainly components) shortages resulting from years of underfunding depot component repairs. If/when Navy stock funding of aviation depot level repairables is successful, the program should allow each engine community to initially achieve its programmed I Level repair standard TAT. Reductions in standard TAT's when/if realized, would then require recalculation of spares requirements for out years of each benefited engine community; such action via forecasted vice actual TAT benefits would be extremely risky as negative peacetime/wartime readiness impacts could occur.

[Clerk's note.—End of questions submitted for the record.]

Mr. Murtha. Thank you very much, Admiral.

The committee will now adjourn until 10 o'clock tomorrow.

BLANK PAGE

TUESDAY, MARCH 11, 1986.

OTHER PROCUREMENT, NAVY AND WEAPONS PROCUREMENT, NAVY

WITNESSES

REAR ADMIRAL WILLIAM D. SMITH, U.S. NAVY, DIRECTOR, FISCAL MANAGEMENT DIVISION, OFFICE OF THE CHIEF OF NAVAL OPERATIONS

REAR ADMIRAL ROBERT H. AILES, U.S. NAVY, DIRECTOR, SURFACE COMBATANT SYSTEMS, OFFICE OF THE CHIEF OF NAVAL OPERATIONS

REAR ADMIRAL STEPHEN J. HOSTETTLER, U.S. NAVY, DIRECTOR, JOINT CRUISE MISSILE PROJECT OFFICE

REAR ADMIRAL KENNETH C. MALLEY, U.S. NAVY, DIRECTOR, STRATEGIC SYSTEMS PROJECT OFFICE

INTRODUCTION

Mr. **CHAPPELL**. The Committee will please come to order.

This session will be closed by a motion duly made and passed in open session in order that we may discuss classified material.

The Committee this afternoon will hold hearings on Navy Weapons and Other Procurement programs. The budget request for both of these accounts represents sizable increases over the fiscal year 1986 appropriation. The budget request for the weapons procurement appropriation is $6.1 billion, which represents an increase of 22 percent over the amount provided last year, after adjusting for Gramm-Rudman-Hollings.

The budget request for the other procurement appropriation is $6.5 billion, and represents an increase of eight percent over fiscal year 1986 after adjusting for Gramm-Rudman-Hollings.

The Committee intends to discuss a variety of issues which will include the Mark 48 ADCAP Torpedo; Strategic and Tactical Missiles; chemical ammunitions; and major other procurement appropriations issues.

We welcome our witnesses, Rear Admiral William D. Smith and Rear Admiral Robert H. Ailes.

Admiral Ailes, since this is your first appearance before our committee, your biography will be made part of the record. I would ask that you begin by summarizing your statements and your formal statements will be made part of the record.

Admiral **SMITH**. Thank you, Mr. Chairman.

OVERVIEW—OTHER PROCUREMENT, NAVY

It is a pleasure to appear before you and present the fiscal year 1987 budget request for the other procurement Navy appropriation.

This appropriation has been carefully structured to provide the necessary funding for improved warfighting sustainability and fleet modernization. In combination with Weapons Procurement, Navy

(WPN) funding, the fiscal year 1987 OPN budget request provides the necessary resources to continue moving toward the overall Department of Defense munitions sustainability objective. The modernization funding in this request continues to gain greater significance as we build our 600-ship Navy and we extend our average ship service life.

The Other Procurement, Navy appropriation is essentially the same in program content and structure as presented last year. The fiscal year 1987 OPN budget request is $6,538.8 million. There are approximately 330 separate programs in this appropriation which finance the procurement of naval ammunition and equipment other than aircraft, missiles, ships and torpedoes.

Funding will support programs designed to improve the active fleet and shore establishment by introducing new or replacement components which expand or maintain existing capabilities.

The fiscal year 1987 request of $6,538.8 million is $157.5 million or 2.5 percent above the approved fiscal year 1986 program. Adjusted for inflation, this request reflects no real growth.

IMPACT OF CONGRESSIONAL ACTION

Before going into detail, one point I would like to discuss briefly is the impact of congressional action on the OPN appropriation.

In the last few years, the authorization and appropriation process has constrained our flexibility in that each line item has a $10 million reprogramming threshold, therefore any increase to the authorized and appropriated total of a budget activity requires a lengthy process to obtain congressional approval for transfer authority.

On the other hand, during the fiscal year 1986 congressional review, an undistributed reduction was applied at the appropriation level. This released some of these constraints allowing us to adjust programs with minimal impact.

Had this reduction been applied as in the past, the Department could have been forced to cut programs even though sufficient savings may have been present within the entire appropriation.

In order to further optimize the use of OPN funds, the following actions are requested:

A. Authorize and appropriate OPN as a single appropriation, as opposed to separate budget activities. The $10 million line threshold will still preclude significant adjustments without the prior approval of Congress.

B. Include language to permit undistributed reductions to be identified throughout the first year of execution, rather than prior to the submission of the next year's budget as is now the case. This will permit the reductions to be applied in such areas as cost savings and program slips instead of forcing undesirable program reductions required to be identified prior to submission of the following year's President's budget.

Neither of these actions would reduce congressional oversight and each will allow execution of congressionally approved programs in a manner which should maximize the return for each available dollar.

[Slide 1.] As I mentioned earlier, the OPN appropriation encompasses 330 separate line items and thousands of equipments, components and spare parts.

Line items are divided into eight budget activities either by equipment or warfare mission commonality. As a portion of the total Navy request, OPN comprises 6.3 percent of the fiscal year 1987 service budget which as a proportion is essentially unchanged from last year.

I would like to reemphasize that the greatest single portion of this equipment is procured in support of the Navy's fleet modernization program. Throughout a ship's life cycle it becomes necessary to replace mechanical, electrical and electronic equipment either to eliminate obsolete components or upgrade our warfighting capability.

Average ship service lives have lengthened from 26 to 30 years or more in the last decade and there is now a greater number of platforms in service requiring OPN-procured hardware support. At the same time, our fiscal year 1987 OPN request reflects zero real growth over the fiscal year 1986 appropriation. The net effect is that in fiscal year 1987 the Navy cannot afford to thoroughly upgrade its warfighting capability.

[Slide 2.] As I mentioned in my prepared statement, my staff thoroughly reviews the OPN budget request line item by line item. Hearings are conducted for each of the 330 programs within the appropriation and I personally review this process.

Last summer we were able to trim $835 million in fiscal year 1987 from the amount reflected in the fiscal year 1987 column of the fiscal year 1986 budget request. Criteria used throughout our review are shown on this viewgraph and include the following:

Unit pricing—inflation indices, quantity buys;
Navy's production approval process—budget timing;
contractor delivery dates versus overhaul installation schedules;
planned contract award dates;
prior program performance—obligation/expenditure history;
outyear programming decisions; and
Navy funding priorities

BUDGET ACTIVITY

[Slide 3.] This slide shows a breakdown of the request for budget activity 1, ship support equipment. This budget activity provides funding for hull, mechanical and electrical equipment, including such vital shipboard items as pumps, generators, and navigation equipment in addition to the other major equipments shown in this table. Highlights of other items funded in this budget activity are shown in the following slides.

[Slide 4.] In addition to hull, mechanical, and electrical components, budget activity 1 funds replacement reactor cores for our nuclear-powered submarine and surface ships.

[Slide 5.] In addition to reactor cores and components, silencing equipment, navigation equipment, and batteries are also procured for our nuclear submarine force; and

[Slide 6.] The sealift support equipment line includes funding for sea sheds and flat racks which enhance our flexibility in deck loading heavy cargo aboard MSC transports.

BUDGET ACTIVITY 2

[Slide 7.] Budget activity 2, communications and electronics, is the largest budget activity in the OPN appropriation. Significant items within this request include:

[Slide 8.] The AN/SQR-19 tactical towed array sonar (TACTAS) which will serve as the primary passive acoustic sensor in the surface fleet for long-range submarine prosecution;

[Slide 9.] the SLQ-32 passive electronic warfare sensor for our surface ships, ELF communications equipment for the submarine force, and countermeasures equipment to improve our warfighting capability in a hostile electromagnetic environment; and

[Slide 10.] satellite communication equipment for rapid transfer of command and control information on a worldwide basis.

[Slide 11.] Funding for modernization of our Navy tactical data systems is the largest single item in the other ship electronic category. This system permits rapid intergration of ship sensor information, analysis and display of tactical information, and designation of weapons systems. It is installed on the majority of our surface ships.

BUDGET ACTIVITY 3

[Slide 12.] Budget activity 3, which is aviation support equipment, includes sonobuoys, air-launched conventional ordnance and support equipment for our aircraft and air stations. In addition to general air ordnance, funding in this budget activity will support procurement of:

[Slide 13.] "Skipper" which is a rocketed laser-guided bomb designed for launch outside the range of enemy close-in defenses. This is a short-range weapon.

Mr. CHAPPELL. Is the target illuminated?

[Slide 14.] Admiral SMITH. It is illuminated by laser. We also fund equipment for our Lamps MARK III helicopter systems; and Bigeye, which is a binary nerve weapon designed to provide a chemical war deterrent and retaliatory capability.

BUDGET ACTIVITY 4

[Slide 15 and 16.] This is a summary of the ordnance support equipment budget activity. Through congressional action, our fiscal year 1986 funding level for OPN-funded war reserve munitions has increased significantly. These programs are directly related to our increasing emphasis on conventional warfighting sustainability.

[Slide 17.] This budget activity includes shipboard ammunition such as that used in the 5"/54 gun which is the most common gun mount in the surface fleet. At the end of fiscal year 1986, 143 ships of the surface Navy will utilize this multi-purpose gun mount against air, surface, and shore targets.

[Slide 18 and 19.]

Sixteen-inch gun ammunition for our reactivated battle ships;

close-in weapons systems ammunition for anti-ship missile self-defense; and various types of small ammunition are used to protect ship security and arm naval landing forces.

Other than conventional ammunition procurement, budget activity 4 is also funded for procurement of fire control radars and missile launching systems.

[Slide 20.] This view of the FFG-7 class guided missile frigate shows several systems supported in this appropriation, such as the MARK-13 missile launcher, the MARK-92 fire control system, the SPS-49 radar, ammunition for both the 76 millimeter gun and the CIWS, as well as the AN/SQR-19 TACTAS.

BUDGET ACTIVITIES 5, 6, 7, AND 8

[Slide 21.] Budget activities 5, 6, 7, and 8 are shown here.

[Slide 22.] Budget activity 5, Civil Engineering Support, which funds a variety of vehicles and construction, also includes our mobile fleet hospital program.

[Slide 23.] Within budget activity 6, supply support equipment, we procure a variety of items which vary from forklift trucks to mechanized material handling systems.

Budget activity 7, personnel and command support equipment, includes training devices for our latest ship weapon and propulsion systems, the Navy's computer acquisition program, and items needed to enhance the physical security of our shore stations and units afloat.

[Slide 24.] This is a picture of some of our security devices.

Lastly, budget activity 8 includes funding for spares and repair parts which up until last year were included in each individual budget activity.

In summary, there are two major aspects to this appropriation request.

FLEET MODERNIZATION

Fleet modernization equipments, or about one-half of the programs within your purview, are an economical way to extend the effective life of our existing ships, make them more reliable and effective, and improve their warfighting capability.

SUSTAINABILITY

No less important, sustainability funding for conventional war reserves is crucial to attaining the objectives of our 600-ship Navy.

This concludes my presentation and I am ready for your questions.

Mr. CHAPPELL. Thank you, Admiral.

[The slides used by Admiral Smith and his prepared statement follow:]

TABLE 1
OTHER PROCUREMENT, NAVY
BUDGET ACTIVITIES
($ In Millions)

	FY 1986	FY 1987	FY 1988
TOTAL REQUEST	6,381.3	6,538.8	7,755.4
o SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
o COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	2,031.4	2,529.9
o AVIATION SUPPORT EQUIPMENT	1,141.4	963.5	1,143.6
o ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.8	1,463.1
o CIVIL ENGINEERING SUPPORT EQUIPMENT	229.4	267.3	277.5
o SUPPLY SUPPORT EQUIPMENT	58.9	82.2	138.2
o PERSONNEL AND COMMAND SUPPORT EQUIPMENT	526.5	556.3	634.7
o SPARES AND REPAIR PARTS	260.0	323.9	409.4

DON BUDGET REVIEW
FY 1987 OTHER PROCUREMENT, NAVY

REQUEST WITHIN NAVY	REQUEST TO CONGRESS
$7,374.5M	$6,538.8 M

REVIEW CRITERIA

- UNIT PRICING
- NAVY'S PRODUCTION APPROVAL PROCESS TIMED WITH BUDGET SUBMISSION
- CONTRACTOR DELIVERY DATES VERSUS OVERHAUL INSTALLATION SCHEDULES
- PLANNED CONTRACT AWARD DATES
- PRIOR YEAR PROGRAM OBLIGATION AND EXPENDITURE PERFORMANCE
- OUTYEAR PROGRAMING DECISIONS
- NAVY FUNDING PRIORITIES

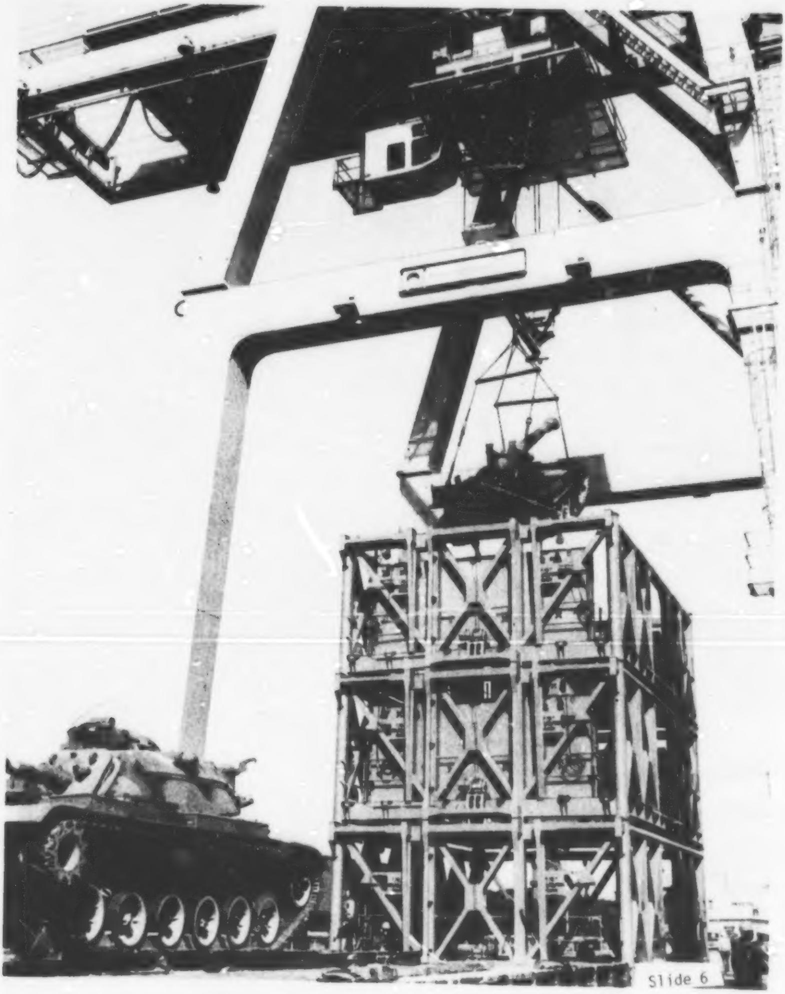
OTHER PROCUREMENT, NAVY
BUDGET ACTIVITY 1
(IN MILLIONS OF DOLLARS)

	FY 1986	FY 1987	FY 1988
SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
HULL MECHANICAL AND ELECTRICAL EQUIP	237.5	314.2	350.8
o SHIP PROPULSION EQUIPMENT	70.5	92.0	73.7
o PUMPS	11.1	18.5	9.9
o NAVIGATION EQUIPMENT	54.6	46.8	41.6
o OTHER HULL MECHANICAL AND ELECTRICAL EQUIPMENT	101.3	156.9	225.6
REACTOR PLANT EQUIPMENT	391.1	430.4	526.6
o REACTOR POWER UNITS	163.4	202.5	290.5
o REACTOR COMPONENTS	227.7	227.9	236.1
OTHER SHIPBOARD EQUIPMENT	278.9	309.8	281.6
o SUBMARINE SILENCING EQUIPMENT	18.0	27.1	14.2
o STRATEGIC PLATFORM SUPPORT EQUIPMENT	53.8	72.8	120.7
o SEALIFT SUPPORT EQUIPMENT	63.8	58.3	37.2
o SURFACE IMA	7.0	21.9	25.7
o CHEMICAL WARFARE DETECTORS	15.4	10.9	14.5
o NAVAL SPECIAL WARFARE EQUIPMENT	37.4	31.7	33.9
o OTHER	83.5	87.1	35.4

64

Slide 4

Slide 5



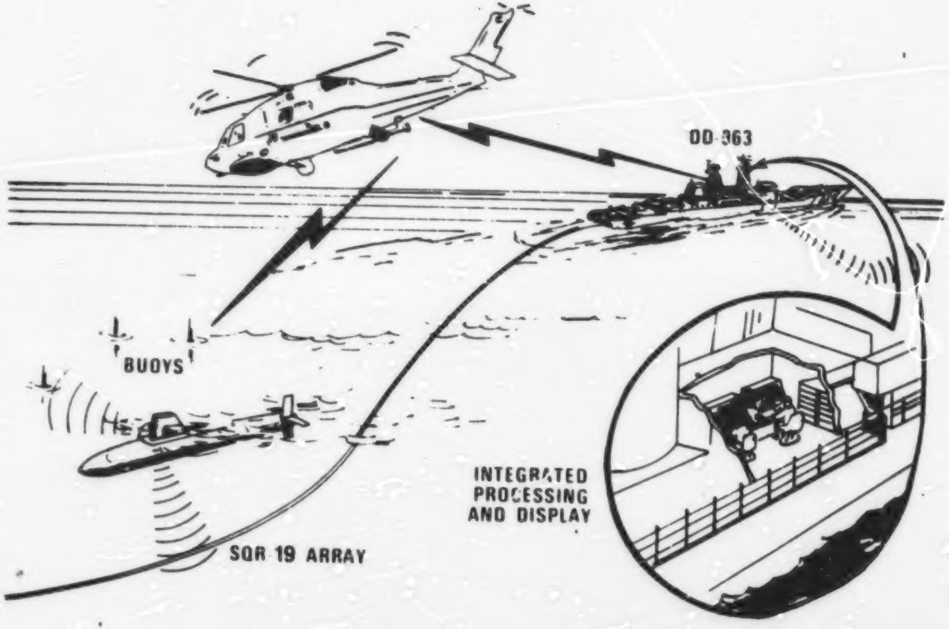
Slide 6

TABLE 3
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 2
($ In Millions)

	FY 1986	FY 1987	FY 1988
COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	2,031.4	2,529.9
o SHIP RADARS	156.0	138.4	166.0
o SHIP SONARS	217.5	220.3	211.5
o ASW ELECTRONICS EQUIPMENT	380.9	373.2	402.7
o RECONNAISSANCE AND ELECTRONIC WARFARE	245.6	278.9	425.9
o OTHER ELECTRONIC EQUIPMENT	358.1	396.8	542.3
o COMMUNICATIONS EQUIPMENT	451.3	462.5	654.7
o STRATEGIC PLATFORM SUPPORT EQUIPMENT	187.5	161.3	126.8

Slide 8

73

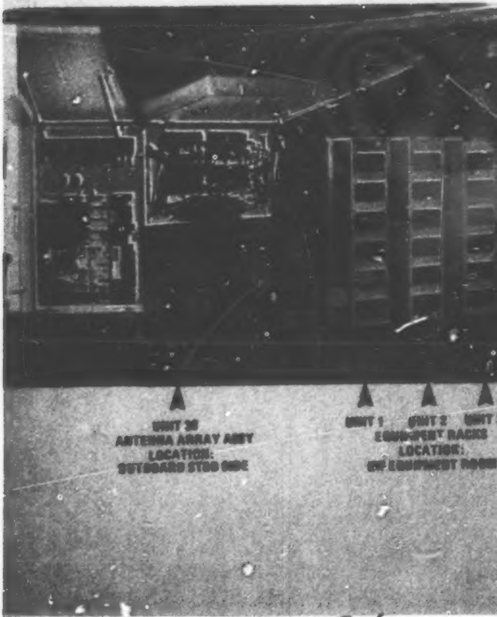

OD 963
BUOYS
INTEGRATED
PROCESSING
AND DISPLAY
SQR 19 ARRAY

BLANK PAGE

BLANK PAGE

BLANK PAGE

AN/SLQ-32


UNIT 30
ANTENNA ARRAY ASSY
LOCATION:
OUTBOARD STBD SIDE
UNIT 1
UNIT 2
UNIT
EQUIPMENT RACKS
LOCATION:
EW EQUIPMENT ROO

AN/SLQ-32(V)3

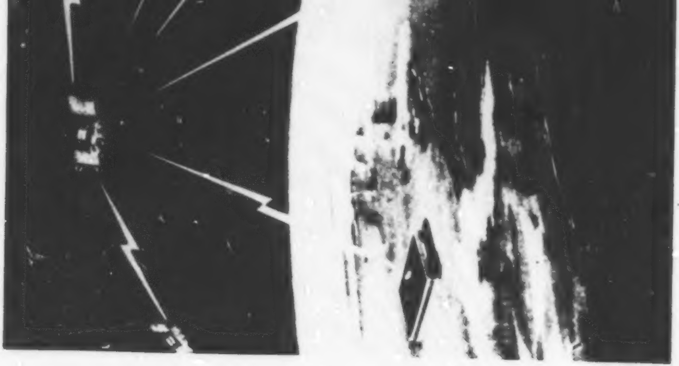
UNIT 1 UNIT 2 UNIT 3
EQUIPMENT RACKS
LOCATION:
EW EQUIPMENT ROOM

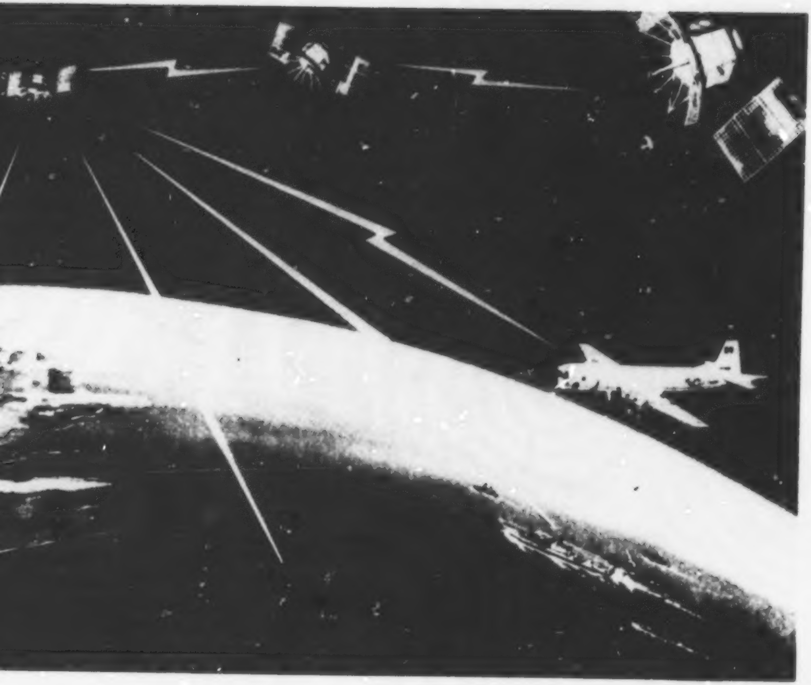
UNIT 20
ANTENNA ARRAY ASSY
LOCATION:
OUTBOARD PORT SIDE

UNIT 5
DISPLAY
AND CONTROL
CONSOLE
(DCC)
LOCATION:
COMBAT INFORMATION
CENTER

UNIT [illegible]
HEAT EX[illegible]
LIQUID TO [illegible]
LOCATION: [illegible]
EW EQUIPMENT
ROOM

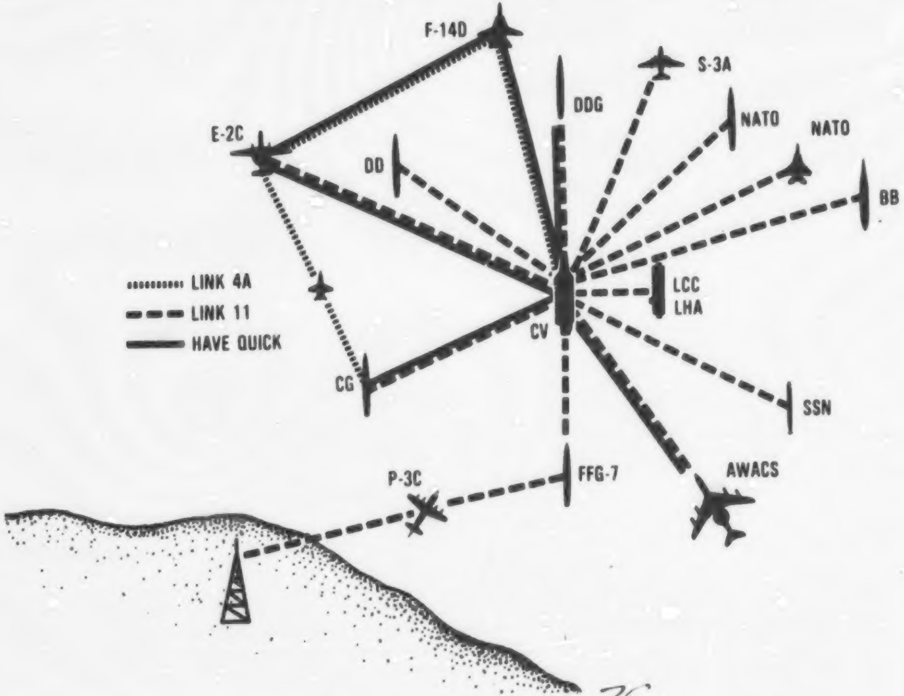
Slide 9





Slide 10

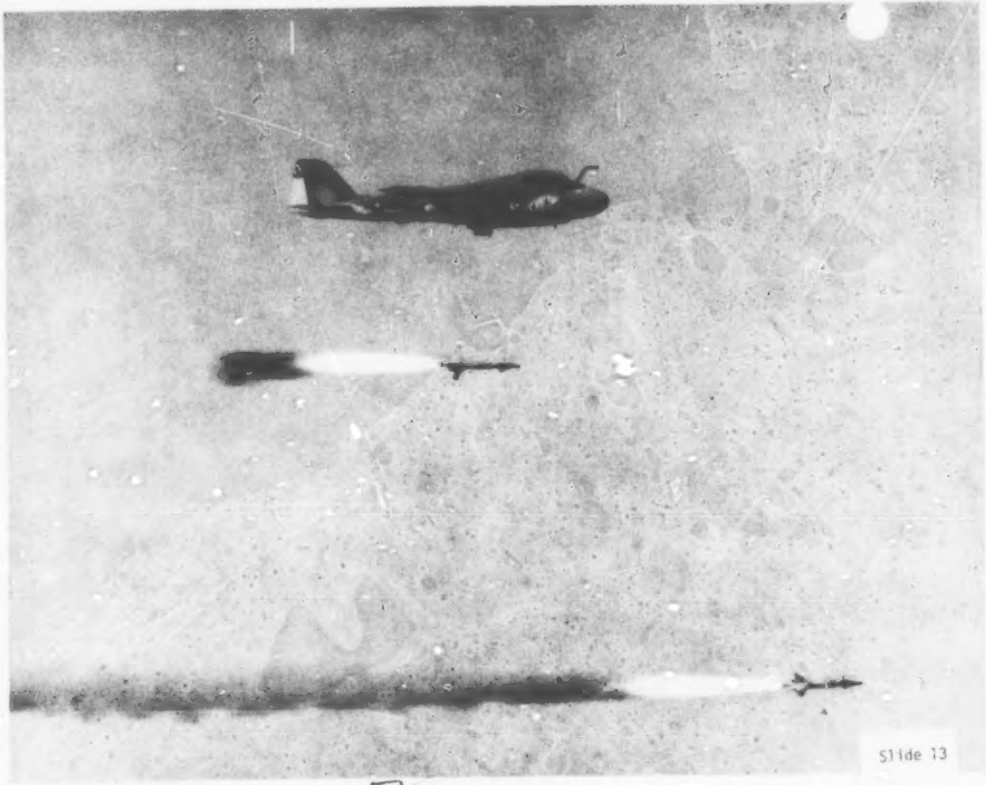
NAVY TACTICAL DATA SYSTEMS


F-14D
S-3A
DDG
E-2C
NATO
NATO
DD
BB
LINK 4A
LINK 11
HAVE QUICK
LCC
LHA
CV
CG
SSN
P-3C
FFG-7
AWACS

76

TABLE 4
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 3
($ In Millions)

	FY 1986	FY 1987	FY 1988
AVIATION SUPPORT EQUIPMENT	1,141.4	963.5	1,143.6
o SONOBUOYS	307.8	235.4	222.8
o AIR LAUNCHED ORDNANCE	552.8	492.3	628.8
o AIRCRAFT SUPPORT EQUIPMENT	280.8	2[illegible]	292.0



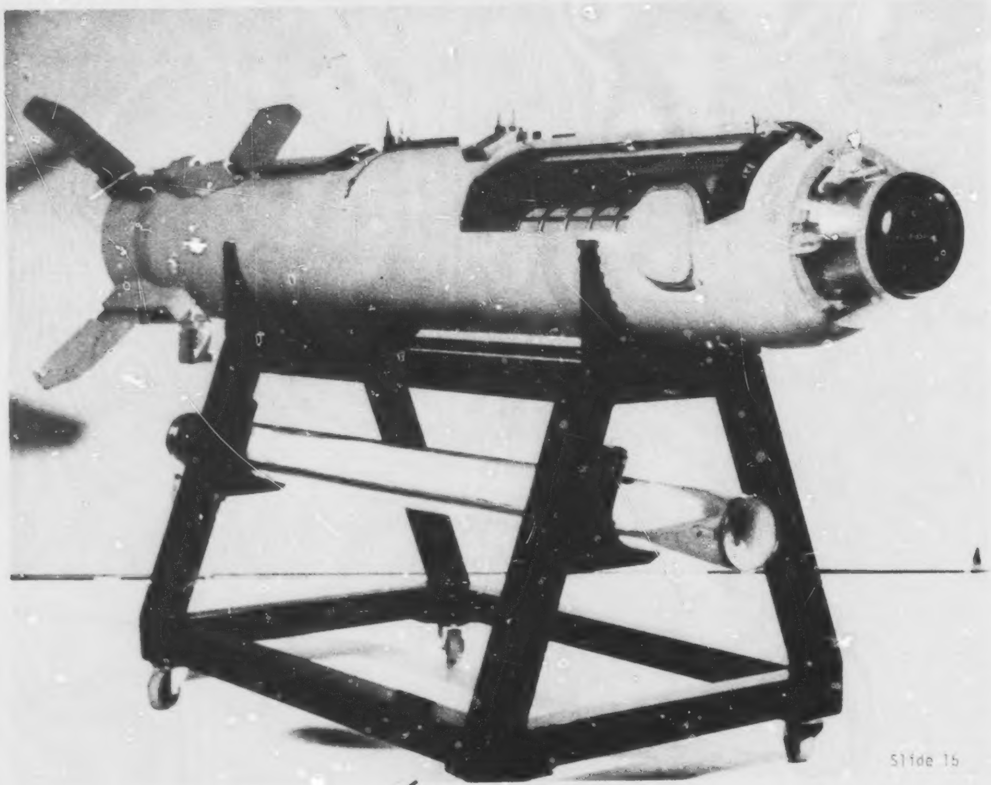
Slide 13

LAMPS MK III
WEAPON SYSTEM

BLANK PAGE

BLANK PAGE

BLANK PAGE

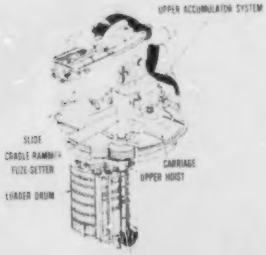


Slide 15

TABLE 6
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 4
($ In Millions)

	FY 1986	FY 1987	FY 1988
ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.9	1,463.2
o SHIP MISSILE SYSTEM EQUIPMENT	406.7	483.5	588.4
o SHIP GUN AMMUNITION	219.1	306.4	288.0
o SHIP GUN SYSTEM EQUIPMENT	58.7	40.1	19.6
o FBM SUPPORT EQUIPMENT	146.9	105.3	125.0
o ASW SUPPORT EQUIPMENT	132.4	148.8	192.3
o OTHER ORDNANCE SUPPORT EQUIPMENT	30.6	36.1	46.8
o OTHER EXPENDABLE ORDNANCE	147.1	139.6	204.1

5"/54 MK 45 MOD 0


UPPER ACCUMULATOR SYSTEM
SLIDE
CRADLE RAMMER
FUZE-SETTER
LOADER DRUM
CARRIAGE
UPPER HOIST

MISSION:

THIS HIGHLY RELIABLE 5" GUN IS DESIGNED TO PROVIDE EFFECTIVE, ACCURATE GUN FIRE SUPPORT IN THE ANTI-SHIP MISSIONS AND AMPHIBIOUS OPERATIONS FOR NEW CONSTRUCTION DLGN, DD AND LHA CLASS SHIPS

FEATURES:

- LIGHTWEIGHT
- FULLY AUTOMATIC OPERATION
- HIGH RELIABILITY
- ALL WEATHER CAPABILITY
- REDUCED SPACE AND MANNING REQUIREMENTS
- LOW LIFE CYCLE COSTS
- MAXIMUM SAFETY
- NO PERSONNEL REQUIRED IN MOUNT

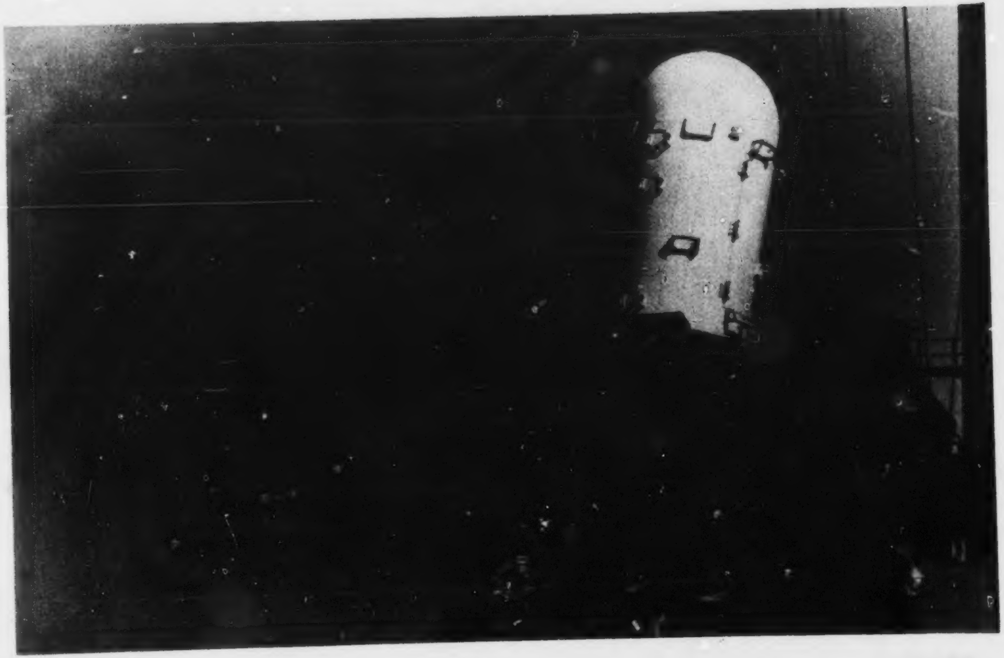
CHARACTERISTICS:

MOUNT WEIGHT (DRY WEIGHT)	49,000 LBS
LOADER DRUM CAPACITY	20 RDS
PROJECTILE WEIGHT	70 LBS
INITIAL VELOCITY	2,650 FT SEC
RANGE	26,000 YD
RATE OF FIRE	16-20 RPM
PERSONNEL REQUIRED	6

COMPATIBLE WITH ALL EXISTING 5" AMMO INCLUDING RAP AND GUIDED PROJECTILE

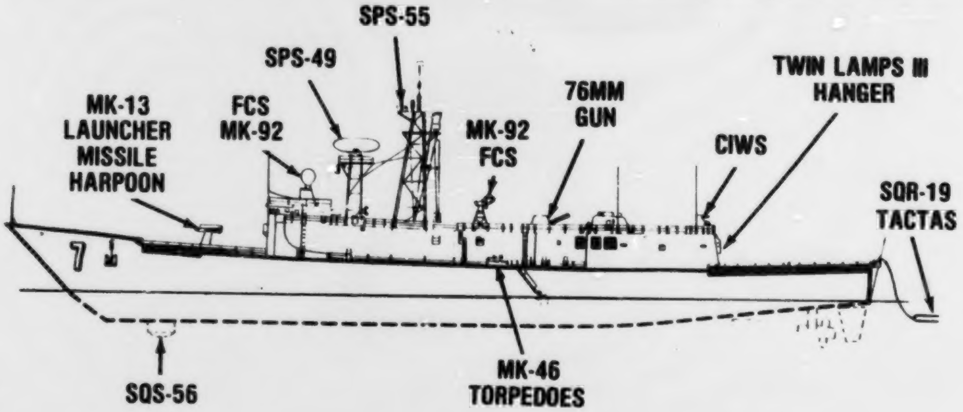
55-478

Slide 18



Slide 49

FFG-7 CLASS COMBAT SYSTEMS


SPS-55
SPS-49
MK-13 LAUNCHER MISSILE HARPOON
FCS MK-92
MK-92 FCS
76MM GUN
CIWS
TWIN LAMPS III HANGER
SQR-19 TACTAS
7
SQS-56
MK-46 TORPEDOES

AAW

- MK92 FIRE CONTROL SYSTEM
- MK-13 MOD 4 MISSILE LAUNCHER
- STANDARD MISSILE (SM-1)
- MK-75 76MM GUN
- CIWS
- AN/SPS-49 RADAR

ASW

- AN/SQS-56 (ACTIVE SONAR)
- AN/SQR-19 (PASSIVE SONAR)
- MK-46 TORPEDO TUBES
- LAMPS III (2 HELOS REPLACES LAMPS I)

SUW

- AN/SPS-55
- MK-13 MOD 4 LAUNCHER
- HARPOON MISSILE
- MK-75 76MM GUN
- STANDARD MISSILE

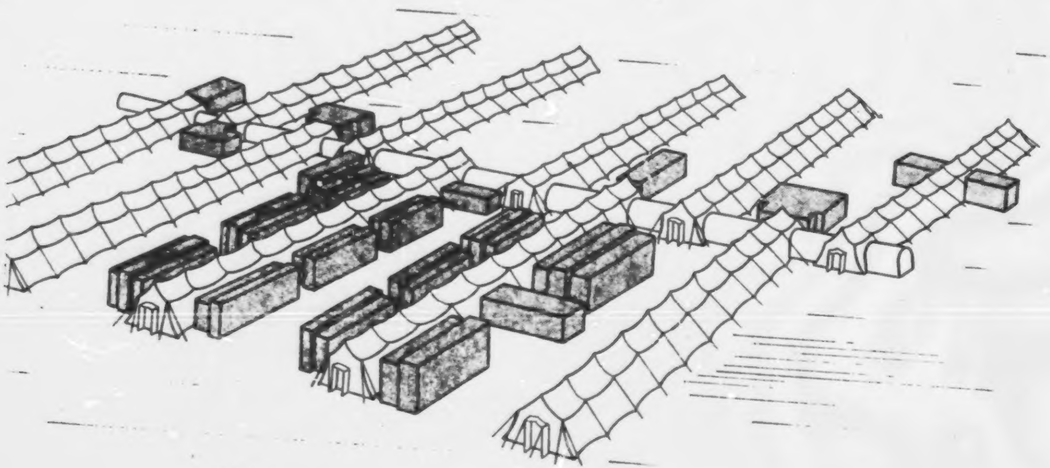
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITIES 5, 6, 7 & 8
($ In Millions)

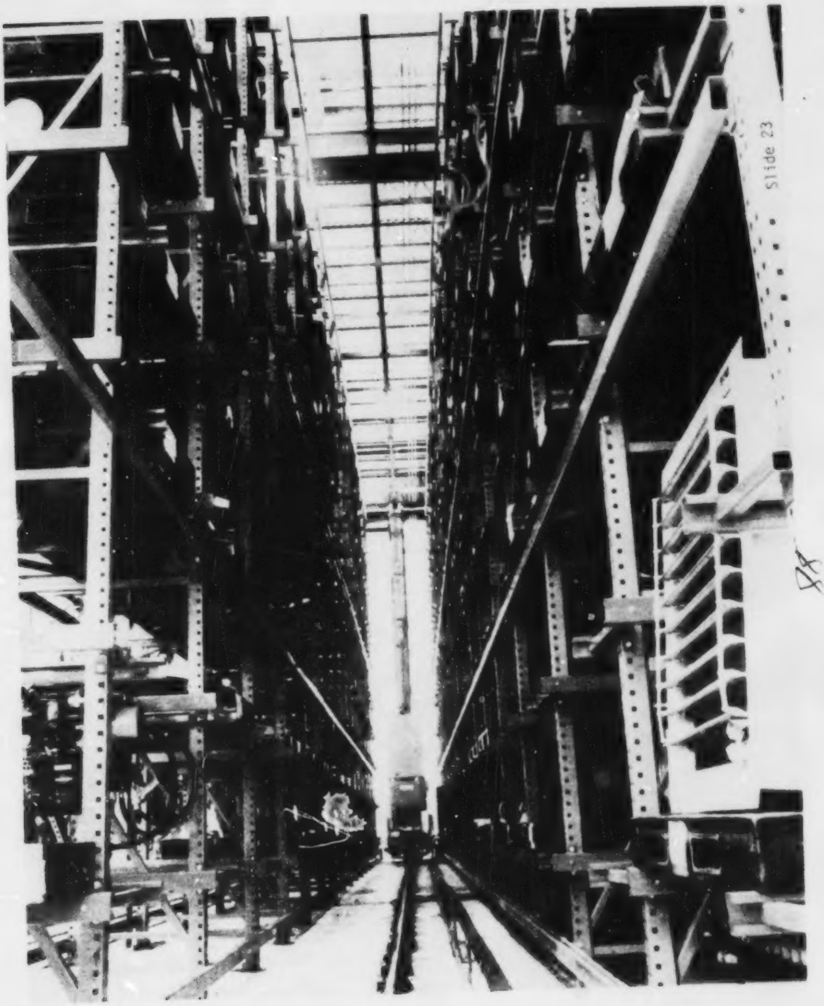
	FY 1985	FY 1986	FY 1987
5. CIVIL ENGINEERING SUPPORT EQUIPMENT	232.5	221.6	366.5
o FLEET HOSPITAL SUPPORT EQUIPMENT	69.2	27.7	109.3
o AMPHIBIOUS EQUIPMENT	59.5	73.0	99.1
o OTHER CIVIL ENGINEERING EQUIPMENT	101.2	120.9	158.1
o SPARES AND REPAIR PARTS	3.6	-	-
6. SUPPLY SUPPORT EQUIPMENT	89.7	62.5	144.7
7. PERSONNEL AND COMMAND SUPPORT EQUIPMENT	471.4	379.8	385.0
o TRAINING DEVICES	102.7	107.3	135.9
o COMMAND SUPPORT EQUIPMENT	125.5	92.5	125.4
o COMPUTER ACQUISITION PROGRAM	227.4	176.6	121.6
o PRODUCTIVITY PROGRAMS	13.0	3.4	2.1
o SPARES AND REPAIR PARTS	2.8	-	-
8. SPARES AND REPAIR PARTS	(260.5)	279.8	265.5

FLEET HOSPITAL PROGRAM

COMBAT ZONE HOSPITAL MEDICAL CORE

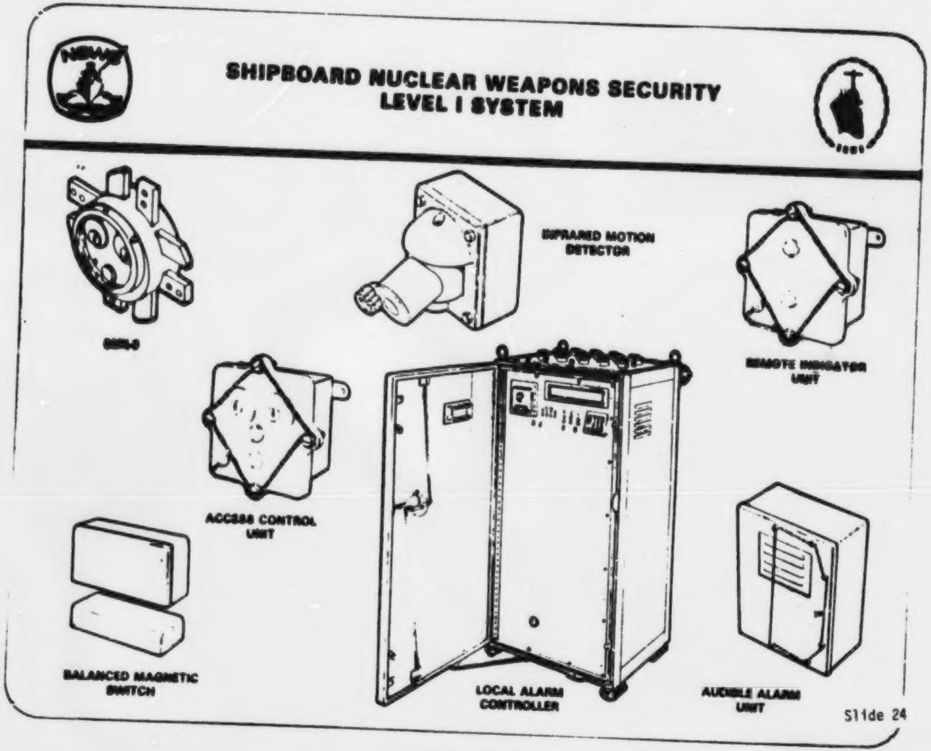
(500 BED)





Slide 23

88



SHIPBOARD NUCLEAR WEAPONS SECURITY
LEVEL I SYSTEM

[illegible]
INFRARED MOTION DETECTOR
REMOTE INDICATOR UNIT
ACCESS CONTROL UNIT
BALANCED MAGNETIC SWITCH
LOCAL ALARM CONTROLLER
AUDIBLE ALARM UNIT

Slide 24

STATEMENT OF REAR ADMIRAL WILLIAM DEE SMITH, U.S. NAVY

Mr. Chairman and members of the Committee, it is a privilege to appear before you and present the fiscal year 1987 budget request for the Other Procurement, Navy (OPN) appropriation.

The Other Procurement, Navy appropriation is essentially the same in program content and structure as presented last year. The FY 1987 OPN budget request is $6,538.8 million. There are approximately 330 equipment programs in this appropriation, which finances the procurement of conventional ordnance and equipment other than aircraft, missiles, ships, and torpedoes. These procurements support programs designed to modernize our fleet, enhance warfighting sustainability, and maintain the support effectiveness of our shore stations. Equipments funded within OPN include a wide range of material varying from items such as Naval Reactor Cores to numerous categories of shipboard electronic sensors and computer hardware. Additional items include air and ship launched ammunition required to sustain our warfighting capability and training readiness; new equipment designed to counter terrorism, and training equipment in support of shipboard operational equipment.

The FY 1987 request of $6,538.8 million supports continued improvements in fleet warfighting capability and is summarized by Budget Activity in Table (1). A point I would like to make is that a large portion of the equipments procured in OPN are related to our ongoing fleet modernization effort. During regular overhauls or shorter availability periods, it is necessary to replace many of the components of a ship's hull, mechanical and electrical systems in order to eliminate obsolete equipment and improve efficiency and ease of maintenance. Examples of such equipments are pumps, generators, air compressors, propellers, steam plant components, and nuclear reactor components. Similarly, as the technology of modern warfare grows more sophisticated during the ship's life, it is necessary to upgrade many of the weapons, sensors, communications systems, and tactical data processing suites on the ship. Our recent experience is that the average ship service life since the 1970's has increased from 26 to 30 years or more. At the same time this increasing number of older hulls require OPN equipment support, the FY 1987 request has remained nearly level in terms of real growth over FY 1986.

Before I discuss the specific programs included in our FY 1987 budget request, I would like to explain the Department's budget process. Each year, the Department of the Navy conducts a detailed budget review of all appropriations. During the summer of 1985, hearings were held on each of the 330 OPN line items. Criteria considered during this review process included:

a. Unit Price: Unit prices must reflect approved inflation escalation indices, consider quantity changes, and pass the reasonableness check.

b. Production Approval: Production approval must be granted in time to permit end item procurement in the year for which OPN funding is requested.

c. Delivery Schedules: End item deliveries and installation schedules must coincide with ship overhaul and restricted availability schedules.

d. Contract Award Dates: Requested funds cannot be deferred until the following year without delaying installation schedules.

e. Prior Year Execution Performance: Prior year contract award schedules are reviewed to determine whether budgeted plans are reasonable.

f. Programming Changes: Budget requests are updated to support outyear program changes reflected in the Program Objective Memorandum (POM) process.

g. Program Priorities: Within financial constraints, the budgeted program reflects the Department's current priorities.

As a result of this process, this request is $835.8 million or 11.3% less than the amount reflected last year in the FY 1987 column of the 1986 President's Budget. This can be attributed to close scrutiny in the budget review process and taking advantage of competitive contracting and inflation savings.

I would also like to address the impact of recent Congressional action on the OPN appropriation. In the last few years, the authorization and appropriation processes have constrained our flexibility in that each budget activity has been authorized and appropriated separately. While line items each have a $10 million reprograming threshold, any increase to the authorized and appropriated total of a budget activity requires a prior approval reprograming request which uses transfer authority and requires extensive time to accomplish. During the FY 1986 Congressional review, an undistributed reduction was applied at the appropriation level. This action released some of these constraints, and allowed the Department to reduce programs with minimal impact. Savings which have occurred within the appropriation have been applied to offset this reduction. If this reduction had been applied at the budget activity level, the Department would have been forced to cut programs within one budget activity, even though sufficient savings were present within the entire appropriation, or process a prior approval reprograming action. In order to further optimize the use of OPN funds it is requested that Congress authorize and appropriate OPN as a single entity, vice by separate budget activities. The $10 million line item threshold will still preclude significant adjustments without the prior approval of Congress. Approval of this action will not reduce Congressional control of the programs in this appropriation. In fact, implementing it allow execution of these Congressionally-approved programs in a timely manner which maximizes the return for each available dollar.

As I stated earlier, a large portion of the equipments procured in OPN, particularly Budget Activities 1, 2 and 4, are related to the Fleet Modernization Program. Since most of the aforementioned equipments are installed during regular ship overhauls, it is not necessary to procure all of the equipments in a single year. Rather, procurement is phased in such a way that equipments deliver shortly before each individual ship overhaul period begins. This means that most equipment procurement programs extend over a period of about five years, the length of time it usually takes for all of the ships covered to enter overhaul. The total quantity required for any given equipment is calculated by ascertaining which ship classes are to receive the equipment and counting the number of ships in each class and the number of units per ship. Additional equipments are procured to satisfy shore-based training requirements, configuration control requirements, and depot repair requirements. The Navy's commitment to Fleet upgrade can best be measured by that portion of the OPN appropriation allocated to ship modernization programs. This portion has increased from $2,232.7 million or 35% of the FY 1986 OPN appropriation to a planning figure of $4,278.1 million which amounts to 49% of the FY 1989 OPN program.

The first Budget Activity request is $1,054.4 million for Ship Support Equipment which is an increase of $146.9 million over FY 1986 (Table 2). The funding requested in this Budget Activity will procure equipments to modernize the hull, mechanical and electrical (H,M&E) capabilities in our current Navy ships, and procure nuclear power units and components for nuclear powered ships, and buy other shipboard equipment required to maintain and modernize the Fleet.

The FY 1987 request for Reactor Plant Equipment is $430.4 million, an increase of $39.2 million from FY 1986. The major items procured in this category are nuclear reactor cores required for refueling of nuclear powered ships. The FY 1987 procurement request includes $202.6 million for cores; and $227.8 million for replacement plant components and equipment required for the continued safe operation of the Navy's nuclear reactors. Replacement core procurement requests are based on long term Navy needs and have been approved for several years on the basis of being the most economical, efficient method of procuring replacement fuel for nuclear powered ships. Further, procurement in accordance with these stabilized plans minimizes the risk of non-availability of cores for emergency replacement while maintaining a viable, two-vendor base for reactor cores.

Strategic Platform Support Equipment funding of $72.8 million will provide for the necessary shore-based support and planned equipment replacement required for the increasing numbers of TRIDENT submarines being introduced into the operating forces. This is primarily for procurement of equipment required to outfit the TRIDENT Refit Facility and the TRIDENT Training

Facility, both at Bangor, Washington, and King's Bay, Georgia. Funding for this vital program is requested in three different budget activities. Funding in this budget activity supports the hull, mechanical, and electrical portions of the overall TRIDENT program.

The remaining funds requested in Budget Activity 1 ($475.3 million) will provide for procurement of various shipboard equipments to support improvement and modernization programs or as part of a planned maintenance replacement program. $34.5 million is requested for the Electrically Suspended Gyro Navigator (ESGN), which will replace and modernize the current inertial navigation systems on SSN-637 and SSN-688 class submarines. Sealift Support Equipment, for which FY 1987 funding in the amount of $52.3 million is requested, provides for the procurement of equipment to enhance the capability of merchant ships performing Naval auxiliary roles to resupply shuttle ships or underway replenishment ships. Among the key items procured in this line are sea sheds and flat racks. The Naval Special Warfare Equipment request of $31.7 million will furnish our Sea-Air-Land (SEAL) forces and Explosive Ordnance Disposal (EOD) Teams with necessary equipments to fulfill assigned missions.

Budget Activity 2, Communications and Electronics Equipment, is the largest budget activity in the OPN appropriation (Table 3). The FY 1987 budget request for Communications and Electronics Equipment is $2,031.4 million, an increase of $15.3 million from the FY 1986 Budget.

The $138.4 million requested for Ship Radars will provide for the procurement of equipment to modernize the Navy's surface search radars, two-dimensional air search radars, and three-dimensional air search radars. The significant line items included in this category are the AN/SPS-48 three-dimensional air search radar ($48.8 million), the AN/SPS-49 two-dimensional air search radar ($17.0 million), the AN/SYS-2 Integrated Automatic Detection and Tracking System ($13.7 million), the MK-23 Target Acquisition System ($20.1 million), and the AN/SPS-40 two-dimensional air search radar ($17.7 million).

A significant level of funding is tied to the New Threat Upgrade combat system (NTU). Procurement of this NTU system, a surface ship anti-air warfare program designed to counter the latest missile threats, was initiated in FY 1983 and continues in FY 1987 with the procurement of four combat systems. The New Threat Upgrade combat system consists of many components which vary by platform and can be divided into the following major subsystems: (1) the new STANDARD SM-2 Block II missile, funded in the Weapons Procurement, Navy appropriation, (2) fire control engagement system modifications, funded in OPN Budget Activity 4, and (3) significant improvements to the AN/SPS-48 and AN/SPS-49 air search radars, which include the addition of the AN/SYS-2 integrated automatic detection and tracking system that integrates the outputs of these two radars to provide a correlated track file. The AN/SPS-48E radar modification provides higher elevation angle coverage, increased average power output, and provides frequency and pattern flexibility to defeat jamming while detecting targets through heavy clutter. The (V)5 modification to the AN/SPS-49 radar provides enhanced electronic counter-counter measures (ECCM) processing and automatic target detection (ATD) capability. The AN/SYS-2 correlates contact data from the AN/SPS-48E and AN/SPS-49(V)5 and provides a single target output to the ship's command and decision system automatically. Installation of the New Threat Upgrade Combat System is planned for TERRIER missile ships of the CG-16 and CG-26 classes, as well as CGN-25, CGN-35 and DDG-42 (22 TERRIER ships). It is also planned for installation on TARTAR missile ships of the CGN-36, CGN-38 and DDG-993 classes (10 TARTAR ships).

The FY 1987 budget request for Ship Sonars is $220.3 million, an increase of $2.8 million from the FY 1986 budget of $217.5 million. $25.1 million is requested to continue the AN/SQS-53B surface ship sonar program which improves the maintainability of this sonar, reduces ship manning requirements, and allows integration of the AN/SQS-53 sonar with other sonar systems, such as the Tactical Towed Array Sonar (TACTAS), using standard modules. $83.3 million is requested for the AN/BQQ-5 submarine sonar to continue the procurement of modification kits to upgrade these sonars to the AN/BQQ-5C expanded DIFAR configuration and to continue production of the TBX array. AN/BQQ-5C modification kits have been in production since FY 1981 and provide a significant improvement of the acoustic sensors on our tactical submarines. The TBX array provides improved capability over the TB-16 array in detection, classification, tracking, and localization. $1.7 million is requested for Fleet Ballistic Missile System sonars to continue maintainability improvements aboard POSEIDON and TRIDENT I backfit submarines. Finally, $36.5 million is requested for replacement sonar switches and transducers for both surface ship and submarine sonars. These switches and transducers are significant fleet readiness items and must be available to replace defective units during scheduled ship overhauls.

The $373.2 million requested for Anti-submarine Warfare (ASW) Electronics Equipment provides for the procurement of a diverse group of ASW-related equipments, and represents a decrease of $7.7 million from the FY 1986 request. $83.1 million is requested for continued modernization of both the underwater and the shore processing segments of our SOSUS system. Further, $112.4 million is requested for procurement of ten AN/SQR-19 Tactical Towed

Array Sonar (TACTAS) systems. The AN/SQR-19 will serve as the primary long-range, passive acoustic sensor input to the LAMPS MK III ASW Helicopter system in our DD-963, FFG-7, and CG-47 Class ships. $28.7 million is requested for follow-on procurement of new towed arrays and modification kits for the AN/SQR-18 Tactical Towed Array Sonar (TACTAS) system which is installed on most FF-1052 class ships. Other items requested in the ASW Electronics category include improvements to the AN/SQR-17 Acoustic Processor ($7.8 million), shore equipment in support of SURTASS ($19.8 million), and modernization of our shore-based ASW Operations Centers ($12.7 million). $27.9 million is requested for follow-on procurement of the Carrier ASW Module which supports embarked carrier ASW airborne weapon systems by providing real time and post mission analysis of acoustic signals. Finally, $46.2 million is requested for initial procurement of Submarine Advanced Combat Systems (SUBACS). SUBACS will perform combat systems management functions including target detection, classification and localization, weapons employment, and contact avoidance.

The $278.9 million requested for Reconnaissance and Electronic Warfare Equipment provides for the procurement of anti-ship missile defense (ASMD) electronic warfare (EW) systems such as the AN/SLQ-17 and the AN/SLQ-32, the procurement of cover and deception systems, and the procurement of tactical intelligence systems such as OUTBOARD and the Naval Intelligence Processing System (NIPS). In addition, the FY 1987 program includes $36.7 million for procurement of COMBAT DF, which provides the Electronic Warfare Signals and Direction Finding System with the capability to detect, locate, and identify targets at long range and to feed this information into the ship's tactical data system.

The $396.8 million requested for Other Electronics Equipment represents a increase of $38.7 million from the FY 1986 request. A large portion of this request ($104.7 million) is for continued modernization of the Navy Tactical Data System (NTDS) on frigates, cruisers, and aircraft carriers. NTDS is a vital system in major warships which permits rapid integration of ship sensor information, analysis and display of tactical information, and designation of weapon systems to force threats. Follow-on procurement funding for the Tactical Flag Command Center (TFCC) is also requested in FY 1987 ($17.2 million). This system is the Flag Commander's afloat interface with the Navy Command and Control System (NCCS). Within the $113.7 million requested for shore electronic equipment is $28.3 million for our General Purpose Electronic Test Equipment (GPETE) program and $39.6 million for our shore based command and control system.

The $462.5 million requested for Communications Equipment includes funding for general shipboard communications ($67.6 million), unique submarine communications ($91.5 million), satellite communications terminals ($43.5 million), cryptographic and cryptologic equipment ($170.9 million), and equipment for our shore based communication centers.

In the shipboard communications area, funds are being requested to continue procurement of radios to replace older UHF and VHF equipment currently in the Fleet and expanded procurement of Extremely Low Frequency (ELF) submarine receiving systems. Within the $43.5 million requested for satellite communications terminals, $9.5 million is budgeted for continued procurement of Demand Assigned Multiple Access (DAMA) systems. The DAMA system provides a five to one increase in channel capacity on the LEASAT satellite system, thereby enabling LEASAT to have a capability comparable to FLTSATCOM. The $158.9 million budgeted for cryptographic devices provides for the continuing support of the Navy and Marine Corps communications security program. Although funded by Navy, the cryptographic devices are procured through the National Security Agency.

Also included in FY 1987 is $161.3 million for Strategic Platform Support Equipment which is requested to procure communications and electronic equipment to outfit the TRIDENT Refit Facility and the TRIDENT Training Facility at King's Bay, Georgia and to procure communications and electronics equipment for the overall TRIDENT program.

A total of $963.5 million is requested for Budget Activity 3, Aviation Support Equipment (Table 4). Included within this request is $235.4 million for Sonobuoys, $492.3 million for Air Launched Ordnance, and $235.8 million for Aircraft Support Equipment.

The FY 1987 budget request for $235.4 million for Sonobuoy procurement has been formulated considering the number of ASW carrier air groups and shore based ASW patrol squadrons to be supported, actual and planned peace-time usage for these forces, and the necessary training allowance requirements. User aircraft include the S-3A, P-3, SH-2D, and SH-3 series. The specific sonobuoys to be procured are: the AN/SSQ-36 bathythermograph sonobuoy which provides a vertical water temperature profile; the AN/SSQ-53, a passive directional sonobuoy used during the target localization phase of air ASW missions; the AN/SSQ-57 which obtains acoustic and sound pressure level data and measures ambient noise; the AN/SSQ-62, an active directional sonobuoy; the AN/SSQ-77, a passive directional sonobuoy utilizing a line array of omni-directional hydrophones and a DIFAR element; the AN/SSQ-86, a one-way acoustic communicator sonobuoy which provides the link between ASW aircraft and submerged submarines; and the Low Cost Sonobuoy which will be used in application such as battleship screening and area anti-submarine barrier operations.

The FY 1986 budget request of $492.3 million for Air Launched Ordnance represents a decrease of $60.5 million from the the $552.8 million appropriated for this effort in FY 1986. The largest single program within this request is general purpose bombs for which we have budgeted $126.9 million. In addition, $28.5 million is requested for BIGEYE Binary Chemical Weapons, $42.6 million for GATOR Air Launched Mines, and $44.7 million for SKIPPER, which is a laser guided air to surface weapon.

The $235.7 million for Aircraft Support Equipment supports a variety of programs. $35.0 million is for the procurement of LAMPS MK III shipboard support equipments. Each ship installation consists of an AN/SQQ-28(V) electronic sonar signal processing system, and AN/SRQ-4 shipboard terminal data transmission device, and a helicopter landing system (HLS). With the $46.4 million budgeted for Weapons Range Support Equipment are numerous instrumentation devices and air control equipments designed to improve strike warfare aircrew training. In addition, $38.8 million is requested for aircraft rearming equipment, $33.7 million for aircraft carrier catapult and arresting gear, and $32.3 million for airborne mine countermeasures equipment.

The FY 1987 request for Ordnance Support Equipment is $1,259.8 which represents an increase of $18.3 million as compared with FY 1986 (Table 5). A total of $306.4 million is requested for Ship Gun Ammunition which is an increase of $87.3 million over the FY 1986 program. Within this category, the 5"/54 Ammunition program request of $75.8 million will allow procurement of training and war reserve requirements in support of the 5"/54 Gun Mount, which is the most common gun mount in the surface fleet. $127.9 million is requested for continued procurement of 5 Inch Guided Projectile ammunition. With its laser guidance system, this projectile will provide the fleet with a high first shot hit probability previously lacking in surface gunnery systems. Other significant Ship Gun Ammunition procurements include $17.1 million for 76MM ammunition used in the MK-75 Gun Mount on the FFG-7 class ships and $41.8 million for Close In Weapon System (PHALANX) ammunition for anti-missile/self defense.

$483.5 million is requested for Ship Missile System Equipment which is a decrease of $23.1 million compared to the FY 1986 request. These equipments will continue to modernize and increase shipboard offensive and defensive missile capabilities. These programs include Surface Missile System (SMS) Ordnance Alterations (ORDALTS), AEGIS support equipment and Surface/Submarine TOMAHAWK Support Equipment. The SMS ORDALT program is designed to improve the reliability, performance, and safety of currently deployed missile systems: TERRIER, TARTAR, and NATO SEASPARROW (Point Defense). A significant item included in the FY 1987 request is $103.8 million for TERRIER and TARTAR Missile Systems Ordnance Alteration (ORDALT) equipment. Surface Missile System (SMS) ORDALTS also included the procurement of self-defense systems such as NATO SEASPARROW ($42.3 million), and associated improvements. The AEGIS Support Equipment request of $60.6 million will procure equipments necessary to support the in-service engineering and fleet training program for

TICONDEROGA (CG-47) class AEGIS cruisers. The Vertical Launch System Program request of $137.8 million will provide funds to procure four complete systems to upgrade DD-963 warfighting capability. Finally, $102.6 million requested for TOMAHAWK support equipment will provide for automated weapon control and ORDALT procurement necessary to improve existing launcher systems.

The $40.1 million budgeted for Ship Gun Systems Equipment includes $19.2 million to enhance the performance of our Gun Fire Control Radars and $20.9 million to replace gun mounts in out Coast Guard vessels.

The FY 1987 request for Strategic Platform support equipment is $105.3 million, a decrease of $41.6 million since last year. This funding will provide support and training equipment for the nation's first line strategic deterrent, the Fleet Ballistic Missile (FBM) Submarine. Equipment procured in this line will permit improvements required to maintain the operational capability of the current FBM Submarines and will also be installed in submarine tenders and shore bases providing direct FBM support. In addition, funds in this line will be used to procure ordnance support equipment required to outfit the TRIDENT Refit Facility and the TRIDENT Training Facility at King's Bay.

The ASW Support Equipment request in FY 1987 is $148.8 million, an increase of $16.4 million from FY 1986. The most significant program request included in the ASW Support Equipment category is $54.1 million for the All Digital Attack Center (MK-117 Fire Control System). The MK-117 System is installed aboard SSN-594, SSN-637 and SSN-688 class submarines, and provides a modern, high speed digital computing facility with digital driven display. This enables the submarine to conduct advanced target motion analysis, to automatically set the MK-48 torpedo, and to control and display weapon launch. The other major program in this category is $40.9 million for the ASW Control System (MK-116 Fire Control System). This program provides surface combatants with an integrated ASW combat system to effectively manage the large numbers of passive and active sonar contracts generated by the introduction of the new systems such as the SQS-53B Sonar, TACTAS and LAMPS MK III.

A total of $175.7 million is requested in FY 1987 for Other Ordnance Support Equipment and Other Expendable Ordnance which consists of a variety of other programs including procurement of Pyrotechnic and Demolition devices ($29.6 million) and QUICKSTRIKE Mines ($29.8 million).

The FY 1987 request for civil engineering support equipment in Budget Activity 5 is $267.3 million, an increase of $37.9 million compared with FY 1986 (Table 6). Budget Activity 5 programs procure commercially available equipment which is used for logistic support ashore and afloat. For both shore activities and operating forces, approved replacement requirements are reviewed for each piece of eligible equipment based on age, mileage or hours, condition, and effect on mission support. Inventory objectives for these requirements fall into one of two main categories which are automotive equipment and construction equipment. Nearly one-half of the equipment proposed for procurement in FY 1987 will replace worn out and obsolete rolling stock used to support a relatively constant mission. The single largest line item in this Budget Activity is fleet hospitals ($110.5 million) within which we acquire deployable medical facilities to care for Navy and Marine Corps combat casualties in the event of hostilities. The equipment in the fiscal year 1987 Amphibious Support Equipment line will be used by the Navy Support

Elements (Naval Beach Groups) to provide necessary logistic support to Marine Corps Air Group Task Forces in advanced base contingency operations. This equipment is used primarily for ship to shore transfer of vehicles and dry cargo and includes such things as non-powered causeway sections, powered causeway sections and side loadable warping tugs.

The remaining funding requested in Budget Activity 5 will procure passenger-carrying vehicles, trucks, trailers, construction equipment, combat construction support equipment, fleet moorings, pollution control equipment and mobile utility support equipment.

Budget activity six includes Supply Support Equipment for which $82.2 million is requested. This represents an increase of $23.3 million as compared with FY 1986 (Table 6). Supply Support Equipment is required to provide a variety of equipment for supply-related functions throughout the Navy. In this Budget Activity forklift trucks, pallet trucks, straddle trucks, and other similar materials handling equipment are procured for all Navy shore activities (except industrially funded activities) and for ships. This budget activity also funds the procurement of state-of-the-art mechanized material handling system.

For Budget Activity 7, Personnel and Command Support Equipment, $556.3 million is requested (Table 6). This amount represents an increase of 29.8 million from the FY 1986 request. Funding of $129.9 million is for replacement and enhancement of training equipment in the surface and subsurface communities. Surface training devices will provide maintenance, operator, team, and refresher training for new combat systems/capabilities being introduced into the fleet. Requested funding supports a variety of cost effective devices including Surface Sonar Trainers, Ship System Trainers and Surface Combat System Trainers.

The submarine trainers will enhance capability to teach normal and emergency ship control procedures to improve skills and submerged ship handling proficiency; provide operator and team training on newly developed sonar systems; support land based training for submarine fire control/combat system attack center team training; provide simulated surfaced submarine piloting techniques; and a visual tactical target capability in submarine training attack centers to teach personnel to integrate information and make critical tactical decisions. Along with these training devices, funding is required to procure Training Support Equipment (TSE) consisting of minor aids to support the education and training programs to supply the fleet with effectively trained personnel

Funding of $181.4 million is requested for replacement and enhancement of Command Support Equipment. Requested funds provide for procurement of medical equipment required by shore activities and forces afloat, as well as Intelligence Support Equipment. Included within this category is a $31.1 million request for Physical Security Equipment, an increase of $18.7 million, which is in keeping with stringent requirements for security ashore and afloat. Areas covered in this line include nuclear weapons security, arms and ammunition security, waterfront perimeters, communications stations, ships in port, and aviation facilities.

In FY 1987 $221.3 million is requested for procurement under the Navy's Computer Acquisition Program (CAP). This program optimizes the purchase of general purpose nontactical automatic data processing equipment (ADPE) for the Navy by centrally managing the procurement process. Major programs include Shipboard Operational ADPE to replace and upgrade nontactical automated support in larger mechanized ships and Marine Air Groups and initial automated capability to alleviate administrative burdens aboard smaller ships. Funds are also requested for the Naval Aviation Logistics Command Management Information System (NALCOMIS). NALCOMIS will respond to the aircraft maintenance and material management requirements at air stations, aboard aircraft carriers, amphibious helicopter assault ships and Marine Corps aircraft groups. Funding provides for equipment for the Stock Point Logistics Integrated Communications Environment (SPLICE). This project will maintain the current level of Fleet logistics support in the 1980's. Funding will provide ADP equipment to support the Chief of Naval Personnel with minicomputers, terminals, and printers to provide automated support to the world-wide network of military Pay/Personnel Offices. Also requested is funding to automate the collection, processing and reporting of civilian personnel data from local civilian personnel offices to Navy management and other federal agencies. Productivity enhancement funds totalling $23.6 million are included in this request to purchase, install, and demonstrate improved labor-saving general operating equipment and new procedures. The single objective of this program is to encourage employment of new methods and devices in order to reduce our operating costs.

Budget Activity 8 provides for all spares which until FY 1986 were procured in the individual Budget Activities. The funding requested (Table 6) provides for the procurement of spares and repair parts for all equipments requiring support by the Systems Commands and is divided between Initial spares ($292.1 million in FY 1987) and Replenishment spares ($31.8 million in FY 1987). The FY 1987 program of $323.9 million includes the procurement of

$.8 million of ships initial spares, $166.3 million of communications and electronics initial spares, $14.6 million of aviation initial spares, $103.9 million of ordnance initial spares, $3.6 million of civil engineering initial spares, $3.0 million of personnel and command initial spares, $9.6 million of aviation replenishment spares, and $22.2 million of ordnance replenishment spares.

In summary, there are two major aspects to this appropriation request. Fleet modernization equipments, or forty percent of the FY 1987 request, are an economical way to extend the effective life of our existing ships, make them more reliable and effective, and improve their warfighting capability. No less important, sustainability funding of $1,259.2 million for conventional war reserves is crucial to attaining the objectives of our 600-ship Navy and accounts for an additional twenty percent of this request. Mr. Chairman, this concludes my prepared statement and I am ready to respond to any questions either you or members of the committee may have.

TABLE 1
OTHER PROCUREMENT, NAVY
BUDGET ACTIVITIES
($ In Millions)

	FY 1986	FY 1987	FY 1988
TOTAL REQUEST	6,381.3	6,538.8	7,755.4
o SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
o COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	2,031.4	2,529.9
o AVIATION SUPPORT EQUIPMENT	1,141.4	963.5	1,143.6
o ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.8	1,463.1
o CIVIL ENGINEERING SUPPORT EQUIPMENT	229.4	267.3	277.5
o SUPPLY SUPPORT EQUIPMENT	58.9	82.2	138.2
o PERSONNEL AND COMMAND SUPPORT EQUIPMENT	526.5	556.3	634.7
o SPARES AND REPAIR PARTS	260.0	323.9	409.4

BLANK PAGE

BLANK PAGE

BLANK PAGE

TABLE 2
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 1
($ In Millions)

	FY 1986	FY 1987	FY 1988
SHIP SUPPORT EQUIPMENT	907.5	1,054.4	1,159.0
o REACTOR PLANT EQUIPMENT	391.2	430.4	526.7
o OTHER SHIPS SUPPORT EQUIPMENT	329.1	475.3	506.9
o STRATEGIC PLATFORM SUPPORT EQUIPMENT	53.8	72.8	120.7

TABLE 3
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 2
($ In Millions)

	FY 1986	FY 1987	FY 1988
COMMUNICATIONS AND ELECTRONICS EQUIPMENT	2,016.1	2,031.4	2,529.9
o SHIP RADARS	156.0	138.4	166.0
o SHIP SONARS	217.5	220.3	211.5
o ASW ELECTRONICS EQUIPMENT	380.9	373.2	402.7
o RECONNAISSANCE AND ELECTRONIC WARFARE	245.6	278.9	425.9
o OTHER ELECTRONIC EQUIPMENT	358.1	396.8	542.3
o COMMUNICATIONS EQUIPMENT	451.3	462.5	654.7
o STRATEGIC PLATFORM SUPPORT EQUIPMENT	187.5	161.3	126.8

TABLE 4
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 3
($ In Millions)

	FY 1986	FY 1987	FY 1988
AVIATION SUPPORT EQUIPMENT	1,141.4	963.5	1,143.6
o SONOBUOYS	307.8	235.4	222.8
o AIR LAUNCHED ORDNANCE	552.8	492.3	628.8
o AIRCRAFT SUPPORT EQUIPMENT	280.8	235.8	292.0

TABLE 5
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITY 4
($ In Millions)

	FY 1986	FY 1987	FY 1988
ORDNANCE SUPPORT EQUIPMENT	1,241.5	1,259.8	1,463.2
o SHIP GUN AMMUNITION	219.1	306.4	288.0
o SHIP MISSILE SYSTEM EQUIPMENT	506.7	483.5	588.4
o SHIP GUN SYSTEM EQUIPMENT	58.7	40.1	19.6
o FBM SUPPORT EQUIPMENT	146.9	105.3	125.0
o ASW SUPPORT EQUIPMENT	132.4	148.8	192.3
o OTHER SUPPORT AND EXPENDABLE ORDNANCE	177.7	175.7	250.9

TABLE 6
OTHER PROCUREMENT, NAVY
BREAKDOWN WITHIN BUDGET ACTIVITIES 5, 6, 7 & 8
($ In Missions)

	FY 1986	FY 1987	FY 1988
5. CIVIL ENGINEERING SUPPORT EQUIPMENT	229.4	267.3	277.5
o FLEET HOSPITAL SUPPORT EQUIPMENT	27.6	110.5	82.7
o AMPHIBIOUS EQUIPMENT	73.0	33.0	41.0
o OTHER CIVIL ENGINEERING EQUIPMENT	128.8	123.8	153.8
6. SUPPLY SUPPORT EQUIPMENT	58.9	82.2	138.2
7. PERSONNEL AND COMMAND SUPPORT EQUIPMENT	526.5	556.3	634.7
o TRAINING DEVICES	102.6	129.9	167.4
o COMMAND SUPPORT EQUIPMENT	256.0	181.4	215.0
o COMPUTER ACQUISITION PROGRAM	163.5	221.3	242.4
o PRODUCTIVITY PROGRAMS	4.4	23.7	9.9
8. SPARES AND REPAIR PARTS	260.0	323.9	409.4
o INITIAL SPARES	233.4	292.1	378.2
o REPLENISHMENT SPARES	26.6	31.8	31.2

114

BIOGRAPHICAL SKETCH
WILLIAM DEE SMITH
REAR ADMIRAL, UNITED STATES NAVY

Rear Admiral William Dee Smith was born 9 February 1933 in Denver, Colorado. He attended the United States Naval Academy and was commissioned an Ensign on 3 June 1955.

After graduation, he served aboard USS BACHE (DD 470) for two years. He then attended U.S. Naval Submarine School in 1958, and upon completion served in USS HARDHEAD (SS 365) until he was selected for nuclear power training. Following prototype training at West Milton, New York, he was ordered to the precommissioning crew of USS TINOSA (SSN 606) where he served for two years as Electrical and Reactor Controls Officer. He was then ordered to USS GEORGE WASHINGTON (SSBN 598) and subsequently to USS ABRAHAM LINCOLN (SSBN 602) as Engineer Officer. He served as Executive Officer of USS WILL ROGERS (SSBN 659) and USS DANIEL BOONE (SSBN 629). For two years he was assigned as the Fleet Ballistic Missile Plans and Targeting Officer on the staff of Commander Submarine Force, U.S. Pacific Fleet.

Upon completion of prospective commanding officer training, he commanded USS HENRY L. STIMSON (SSBN 655) (GOLD) and (BLUE) during and after ship's overhaul. Following command he served on the Nuclear Propulsion Examining Board, Commander in Chief, U.S. Pacific Fleet, both as Deputy Senior Member and as Senior Member. He was then assigned as Nuclear Power Project Manager in the Office of the Chief of Naval Personnel.

He assumed command of Submarine Squadron FOURTEEN, Holy Loch, Scotland in October 1978. Upon relief in June 1980, he was promoted to Rear Admiral and transferred to Washington, D.C. for duty as Director, Naval Communications (OP-941) in the Office of the Chief of Naval Operations, where he served for three years. In July 1983 he was ordered to duty as Commander Submarine Group EIGHT and Commander Submarines Mediterranean, Naples, Italy. He reported to the Office of the Comptroller of the Navy on 1 April 1985 to relieve as Director, Office of Budget and Reports (NCB)/Fiscal Management Division (OP-92).

Rear Admiral Smith is married to the former Sabra Harriman of Norway, Maine. They have two children, Frederick, a Midshipman at the U.S. Naval Academy, and Evangeline, a student at Woodson High School in Fairfax, Virginia.

Overview—Weapons Procurement, Navy

Mr. Chappell. Admiral Ailes.

Admiral Ailes. Thank you, Mr. Chairman. It is my privilege to appear before you and present the weapons procurement Navy request for fiscal year 1987.

Accompanying me this afternoon are Rear Admiral Hostettler, who is prepared to discuss TOMAHAWK issues, and Rear Admiral Malley, who is prepared to respond to strategic systems issues.

My purpose is to provide you with information regarding both the weapons procured through this appropriation and discuss our plans for managing the acquisition of these weapons systems.

Let me first focus on what the navy has procured with the money you have appropriated over the past several years and then discuss how we intend to spend the funds we are requesting this year.

THE FOUR PILLARS

An effective method that we use to discuss our requirements is the "four pillars concept.' The four pillars help us evaluate the balance of our program between procurement for future capabilities and procurement for our current combat needs.

The force structure pillar addresses the procurement of ships and aircraft.

Modernization, or as I call it, warfighting improvement, is funding to develop new systems or improvements to weapons our current inventory.

Readiness relates to training and maintenance of equipment.

Finally, sustainability is procurement of the missiles, bullets, supplies, and reserve components necessary to keep our combat forces going in a prolonged conflict.

Sustainability, the principal component of the WPN appropriation, has been and continues to be the fastest growing portion of the Navy's budget. It has gone from four percent of TOA in 1980 to about ten percent at present.

[Slide 1.] Although we have not reached all goals in this area, as this viewgraph shows we have made substantial progress in our ordnance inventory posture.

Surface-to-surface missiles actually on hand, for example, have increased nearly 100 percent since 1981. Additionally, the picture will continue to improve as ordnance already funded delivers to the fleet in the years to come.

The overall fiscal year 1987 WPN request is for $6.1 billion, compared to this year's budget of $5.2 billion. [Slide 2.] This viewgraph summaries the funding by budget activity and highlights the most significant changes.

SUMMARY BY BUDGET ACTIVITY

Let me briefly discuss each budget activity. Within budget activity 1, we fund the initial production of the TRIDENT II missile and continued system support of the TRIDENT I and POSEIDON missiles.

Budget activity 2, other missiles, provides funding for TOMAHAWK and a variety of air-to-air, air-to-ground and surface-to-air missiles.

Within budget activity 3, we procure torpedoes and related ASW equipments.

Budget activity 4, other weapons, funds procurement of PHALANX close-in-weapon system, the MARK 75 76-millimeter gun mount, modifications to various shipboard gun systems and a variety of small arms.

Budget activity 5, spares, procures the initial and replenishment spares for the hardware procured in the other four budget activities.

As you can see, the procurement of the 21 TRIDENT II missiles accounts for the growth in this year's WPN request. Setting this particular area of growth aside, the WPN appropriation essentially remains level funded when compared to our fiscal year 1986 budget.

I think it is important to note that the Navy is continuing its initiatives which will lead to more weapons for the money. Our intention is to get the most out of every dollar Congress appropriates through rigorous oversight of budget execution, competition and multiyear contracts.

[Slide 3.] Let me discuss several examples.

DUAL SOURCE PROCUREMENT

Our fiscal year 1987 request emphasizes dual source procurement. As you know, we are already procuring TOMAHAWK, SPARROW and SIDEWINDER through competition. This year's WPN request includes funds to initiate competitive dual source procurement of the ASUW torpedo, the MARK 50 advanced lightweight torpedo, and vertical-launched ASROC.

Additionally, funds are included to continue the competitive dual source process for PHOENIX, the MARK 48 ADCAP, standard missile, and RAM.

The benefits, both financial and military, are clear. The most significant are more rapid attainment of adequate inventories, broadening of our production base for these complex weapons, the potential for reduced unit cost, and the advantage of not having to rely on a single contractor.

SOLE SOURCE VS. COMPETITION

Mr. CHAPPELL. Before you move from that chart, you mean to tell me we haven't had competition in PHOENIX, ADCAP, the ASUW torpedo, MARK 50, vertical launch ASROC? We haven't had competition with those? They are all sole source?

Admiral AILES. We have competed components, but we are now developing complete second sources so we will have full competition. The principal contractor has competed some of the components, but we have not had dual, equal competitive sources for the items, sir.

Admiral SMITH. We have competed for the single source for the weapon system in some of those programs.

Mr. CHAPPELL. How many years ago?

Admiral SMITH. He is referring to dual competition. It would vary for each system, Mr. Chairman. When we originally put the weapon system up for competition, for bid, it was a competitive bid to get the sole source procurement, and his statement refers to dual source competition for those systems.

Mr. CHAPPELL. When did you first compete, even to develop your sole source?

Admiral SMITH. We will provide that for the record.

[The information follows:]

In the case of the Phoenix missile, the Navy's first solicitation was issued in December of 1961. At that time 21 contractors responded and, of those, 6 were considered qualified. The Phoenix missile contract was awarded to Hughes Aircraft Corp. Honeywell Incorporated has been the Navy's sole source producer of MK-50 Torpedoes since the first contract award in FY 1979. $10.1 million and $13.7 million is budgeted in FY 1987 and FY 1988, respectively to second source procure one-half of these weapons. The Vertical Launch Asroc (VLA) contract was initially competed and awarded to Goodyear Aerospace Industries in FY 1983. Our FY 1987 and FY 1988 budget requests include $20.9 million and $9.8 million, respectfully, to develop a second source. Regarding the MK-48 ADCAP, competitive solicitation for advanced development was made in FY 1979. Hughes aircraft won the prime contract award in FY 1980 and has remained a sole source producer since that time. The Navy's budget request includes funding to second source compete one-fourth of this program in FY 1987 and forty percent of the weapons in FY 1988.

Mr. CHAPPELL. It was a number of years ago?

Admiral AILES. In terms of who was the sole source that was competed. In addition, the prime contractor has competed some of the components as I think you know, sir.

Mr. CHAPPELL. All right, sir, you may proceed.

Admiral AILES. Thank you, sir.

I would like to outline several of our programs in which dual source procurement is planned.

TORPEDOES

[Slide 4.] The first is the MK-48 ADCAP heavyweight torpedo.

We plan to start full competitive procurement in fiscal year 1988. To achieve that goal, actual familiarization of two follower contractor candidates began in September 1985, and final selection will occur later this month.

Our fiscal year 1986 budget included 12 qualification torpedoes for each second source. The contractor we select in March will produce 50 directed production torpedoes in fiscal year 1987 to be ready for competitive production in fiscal year 1988.

[Slide 5.] Within our family of lightweight torpedoes, this year's request contains our first request for procurement of the MARK-50 advanced lightweight torpedo. The MARK-50 provides our air and surface platforms a torpedo with enhanced performance and lethality. It is designed to counter all known and forecast submarine threats through the year 2000.

We plan to commence competitive procurement of the MK-50 torpedo in fiscal year 1990. To achieve this goal funding is included in this year's request to commence technology transfer efforts.

In fiscal year 1988, the follower contractor will produce 100 torpedoes with which to qualify and be ready for competitive production in fiscal year 1990.

[Slide 6.] Fiscal year 1987 is our first request for the procurement of vertical launched ASROC. VLA is a rocket-propelled ASW torpedo which provides a standoff ASW weapon capability for the CG-47, DDG-51, and DD-963 ship classes which are configured with vertical launching systems.

Capable of carrying either the MK-46 or MK-50 torpedo, the VLA program is structured toward early competition. This year's request contains $20.9 million for the procurement of 60 VLA second-source qualification missiles. This acquisition strategy will support full competition in fiscal year 1989.

MISSILES

[Slide 7.] In the area of surface-to-air missiles, our request this year includes funding for a total of 1,194 BLOCK II versions of the standard missile. This total consists of 844 SM-2 medium-range missiles and 350 SM-2 extended range missiles.

Both of these versions of the SM-2 missiles incorporate longer range, improved accuracy, improved fusing and warhead, and greater electronic countermeasure resistance.

These missiles are the primary air defense weapon for our Aegis cruisers and destroyers and those 31 ships currently in our inventory that will receive the new threat upgrade.

The BLOCK II missile is a vital component of an enhanced combat system consisting of improved detection, target processing, electronic countermeasures, and launcher systems. We plan to start full competitive procurement of the BLOCK II missile in fiscal year 1988.

Mr. CHAPPELL. You intend to end up with dual source?

Admiral AILES. Yes, sir. We are in single source now.

Mr. CHAPPELL. Is this a leader-follower-type procurement?

Admiral AILES. Yes. We will have a follower relationship.

We believe the Navy's fiscal year 1987 WPN request is balanced, affordable, and properly constructed to meet the needs of the Navy and the nation. Our overriding emphasis in this year's request remains ordnance sustainability. We have funded the readiness account—torpedo support equipment, and ASW range support—at a level which will provide the fleet with the training essential to tactical proficiency. Modernization funding is selectively targeted at our most pressing requirements: close-in air defense, anti-terrorist security, and an expanded special warfare cabability.

As stated earlier, Congress has funded increased ordnance procurement in recent years. As those weapons deliver, we are moving toward our sustainability and readiness objectives. This year's WPN request, in the mix of weapons and support funding presented, represents another vital step toward attainment of those objectives by 1989. Your support of this year's budget is crucial to maintaining the momentum we have established.

Thank you, Mr. Chairman.

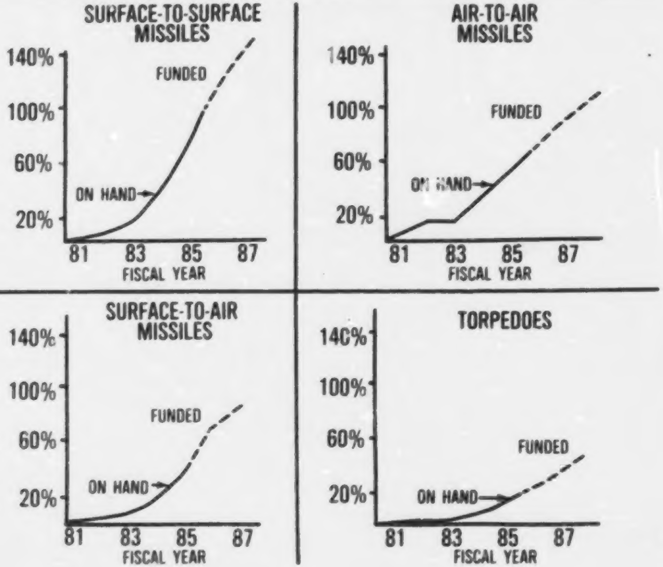
[The slides used by Admiral Ailes and his prepared statement follows:]

AVAILABLE

ORDNANCE SUSTAINABILITY IMPROVEMENT

PERCENT INCREASE IN STOCKS ON HAND

(BASE YEAR: FY 81)



SLIDE 1

WPN FUNDING

BUDGET ACTIVITY	FY 1986	FY 1987	CHANGE	REMARKS
BALLISTIC MISSILES	$602.6M	$1,437.0M	+$834.4M	21 TRIDENT II
OTHER MISSILES	$3,455.9M	$3,343.1M	-$112.8M	
TORPEDOES & RELATED EQUIPMENT	$782.7M	$971.4M	+$188.7M	227 MK 48 ADCAP 84 MK 50 TORPEDO 200 VLA
OTHER WEAPONS	$223.4M	$193.2M	-$30.2M	
SPARES	$151.5M	$150.7M	-$0.8M	
TOTAL	**$5,216.1M**	**$6,095.4M**	**+$879.3M**	

WPN DUAL SOURCE PROCUREMENT

COMPETITION IN PROGRESS	COMPETITION PROJECTED
TOMAHAWK	PHOENIX
SPARROW	MK-48 ADCAP
SIDEWINDER	ASUW TORPEDO
	MK-50 ALWT
	RAM
	STANDARD
	VERTICAL LAUNCH ASROC

- BENEFITS:
  - BROADENED INDUSTRIAL BASE
  - ACCELERATED INVENTORY BUILD-UP
  - REDUCED UNIT COSTS
  - PROTECTION FROM CONTRACTOR PERFORMANCE PROBLEMS

SLIDE 3

MK-48 ADCAP
HEAVYWEIGHT TORPEDO

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	123	227	296
COST ($M)	$395.9	$508.4	$552.6

- HIGH SPEED, DEEP DIVING - CAPABLE AGAINST THREATS OF LATE 1980's AND 1990's
- IMPROVED PERFORMANCE IN ADVERSE ENVIRONMENTS
- MEETING OBJECTIVES OF STRENUOUS DEVELOPMENT PROGRAM
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

MK 50 ADVANCED LIGHTWEIGHT TORPEDO

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	–	84	204
COST ($M)	–	$109.9	$346.9

- ENHANCED PERFORMANCE ANTI-SUBMARINE TORPEDO-CAPABLE AGAINST THREATS THROUGH THE YEAR 2000
- CARRIED BY AIR AND SURFACE PLATFORMS
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

VERTICAL LAUNCHED ASROC (VLA)

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	–	200	300
COST($M)	–	$74.3	$73.5

- STANDOFF CAPABILITY FOR CG-47, DDG-51 AND UPGRADED DD-963 CLASSES
- MK46 OR MK50 TORPEDO PAYLOAD
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

BLANK PAGE

BLANK PAGE

BLANK PAGE

STANDARD MISSILES
SM-2MR & SM-2ER

PROCUREMENT PROFILE

	FY 86	FY 87	FY 88
QUANTITY	1316	1194	1250
COST ($M)	$837.6	$730.6	$747.3

- IMPROVED BLOCK II VERSIONS
- SUPPORTS AEGIS AND NEW THREAT UPGRADES (NTU's)
- COMPETITIVE DUAL SOURCE PROCUREMENT PLANNED

PREPARED STATEMENT OF RADM ROBERT H. AILES, USN
DIRECTOR, SURFACE COMBAT SYSTEMS
OFFICE OF THE CHIEF OF NAVAL OPERATIONS

Mr. Chairman and distinguished members of the Subcommittee, it is my privilege to appear before you to present the Navy's Weapons Procurement (WPN) request for fiscal year 1987. My purpose is to provide you with information on the capabilities and characteristics of the weapons procured through this appro-priation, explain the funding requirements for associated support programs and discuss our plans for managing the acquisition of weapons systems.

I will start with the fundamentals. The mission of the Navy, as set forth in Title 10, U.S. Code, is to be prepared to conduct prompt and sustained operations at sea in support of the national interest. In meeting this mission, the first objective is the deterrence of any potential aggressor through advanced warfighting technology backed by the highest achievable operational readiness. If deterrence fails, the Navy must be ready to take the offensive and fight for as long as necessary to destroy the enemy and terminate the conflict on favorable terms. Further, given the expanding threat of terrorism, the Navy must be prepared to defend and assist U.S. citizens as well as to safeguard its own ships, personnel, and installations around the world from politically inspired violence. The ordnance procured through the WPN appropriation is fundamental to the fleet's ability to carry out these demanding requirements.

The fiscal year 1987 WPN request and the Five Year Defense Plan are designed to achieve sufficient weapons inventories to sustain Naval forces in combat. This year's request is for $6.095 billion. The growth over last year's appropriation of $5.228 billion results primarily from the initial procurement of Trident II missile. Initial procurement of the MK 50 Advanced Lightweight torpdeo and Vertical Launched Asroc, and increased procurement of the MK 48 ADCAP torpedo and TOMAHAWK contribute to this year's growth. This growth reflects the Navy's commitment to fund the procurement of munitions sufficient to meet its worldwide responsibilities and commitments.

As you are well aware, Congress has given improved ordnance readiness and sustainability top priority, and has supported the high levels of WPN funding commensurate to that priority. As can be seen in Figure 1, WPN funding has increased over 200 percent since 1981 which is in sharp contrast with a generally constant level of funding from 1977 through 1980. Recent funding has achieved a heartening growth of weapons inventories as ordnance procured with fiscal year 1982 through 1985 funding has been delivered to the fleet. Moreover, as shown in Figure 2, the increased production rates have achieved reductions in unit costs of some of our most important weapons. This result reflects efficiency achievable by contractors in ordering material and operating production facilities as well as reduced production costs from greater competition in procurement contracts.

The Navy's procurement policies emphasize the need to continue efforts for buy more weapons for the money. We intend to get the most out of every dollar appropriated through extensive use of multiyear contracts, competition, and rigorous oversight of budget execution. This year's WPN request includes funds to: (1) initiate competitive dual source procurement of the MK 50 Advanced Lightweight torpedo, Vertical Launched Asroc (VLA) and the ASUW torpedo, (2) continue the competitive dual source procurement process for PHOENIX, the MK 48 ADCAP torpedo and both the medium range (MR) and extended range (ER) STANDARD missiles, and (3) initiate the multiyear procurement of the High Speed Anti-Radiation Missile (HARM).

The fiscal year 1987 Weapous Procurement, Navy Budget request consists

FIGURE 1

WPN FUNDING TREND

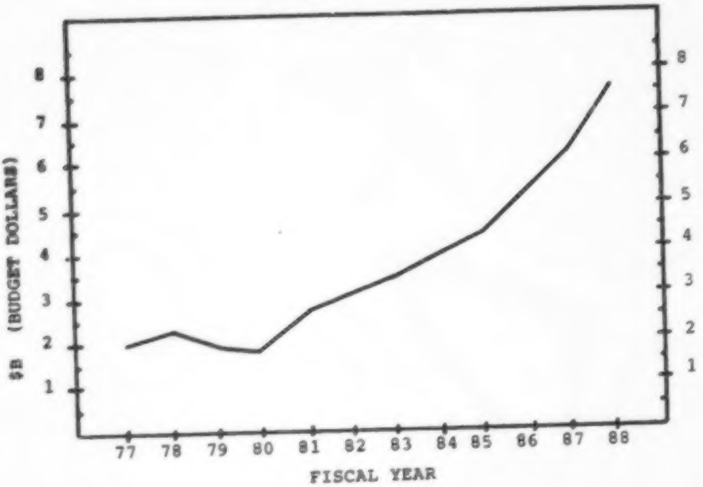


FIGURE 2

INCREASED PROCUREMENT = REDUCED UNIT COST*

($K)

WEAPON	FY 86 Qty	FY 86 Unit Cost	FY 87 Qty	FY 87 Unit Cost	DOLLAR REDUCTION	PERCENT REDUCTION
HARM	825	$286	1110	$236	$50	17
SIDEARM	200	$145	256	$89	$56	39
IIR MAVERICK	195	$136	419	$124	$12	9
MK 48 ADCAP	123	$1853	227	$1323	$530	28
TOMAHAWK	249	$3200	324	$2800	$400	12

* Procurement unit cost. Includes spares.

of five Budget Activities, each containing similar line items. These are:

- Activity One, Ballistic Missile.
- Activity Two, Tactical Missiles.
- Activity Three, Torpedoes and Related Equipment.
- Activity Four, Gun Systems and Small Arms.
- Activity Five, Spares and Repair parts.

This structure reflects a change implemented in the Fiscal Year 1986 budget to optimize the management of spares procurement. Segregation of all spares has increased the flexibility of related funding and procurement decisions. The result has improved our ability to monitor the requirement for procurement of spares during program development. The Navy appreciates the support of this Subcommittee in affecting this change.

Of immediate concern at this hearing is how the Navy intends to spend the money it is requesting to improve warfighting capabilities. The Navy characterizes its requirements for funding by balancing the "Four Pillars" of Naval requirements. These four pillars are Force Structure, Warfighting Improvement, Readiness and Sustainability. The four pillars illustrate the balance that must be achieved in our budget for future capabilities (Force Structure, Warfighting Improvement) and for present capabilities (Readiness, Sustainability). The first pillar, Force Structure, refers to acquisition of ships and aircraft. While we don't procure these items in the WPN account, we pay close attention to the SCN and APN appropriations as we determine what and how many weapons are necessary.

WPN does fund a significant part of the Navy's second pillar, Warfighting Improvement. Warfighting Improvement is represented within WPN by the procurement of new gun mounts for existing ships and by funding of modifications to weapons already in our inventory. Readiness includes the training and the maintenance of equipment. In WPN, readiness funding procures anti-air and anti-submarine targets, weapons range services, rework of weapons used in training exercises and spare parts.

Sustainability, the final of our four pillars, is the principal component of the WPN appropriation. Sustainability procurement includes the acquisition of ordnance, war reserve supplies and procurement in support of the naval reserve. Over 60 percent of sustainability funding is for ordnance.

Figure 3 presents the balance between readiness, warfighting improvement and sustainability within the WPN budget request. As you can see, Warfighting Improvement makes up 9 percent, Readiness 20 percent and Sustainability over 71 percent. For comparison, Figure 3A shows the proportion of the WPN appropriation within each of the five budget activities. In this more traditional display, you can see that 23 percent of the funding is related to strategic systems, 55 percent to tactical missiles, 16 percent to torpedoes and ASW systems and 3 percent to guns. The final 3 percent of the request is for spares.

Let's turn to the individual WPN items and discuss the Navy's fiscal year 1987 request in terms of the Four Pillars. In order to concentrate on major issues, I have provided summarized details of the funding request in a series of charts. The items are grouped by "Pillars" to help illustrate the use of the funding requested. Each chart shows the fiscal 1987 budget request and authorization items for fiscal year 1988. For purposes of comparison, the quantities of weapons and funds appropriated in fiscal year 1986 are also displayed.

SUSTAINABILITY PROCUREMENT

The initial focus is on our Sustainability Pillar. Figures 4 through 8

FIGURE 3

FOUR PILLARS BALANCE OF WPN REQUEST

(TOTAL: $6.1 BILLION)

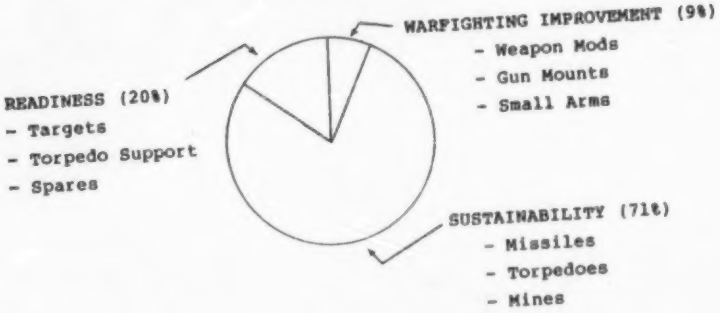


FIGURE 3A

WPN REQUEST BY BUDGET ACTIVITY

(TOTAL: $6.1 BILLION)

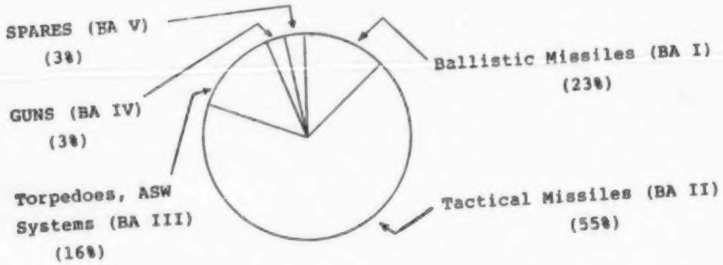


Figure 4

ORDNANCE SUSTAINABILITY PROCUREMENT: BALLISTIC AND CRUISE MISSILES

	FY 1986		FY 1987		FY 1988		
WEAPON	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
TRIDENT II	-	550.9	21	1424.4	66	2283.7	Increased payload and accuracy compared to TRIDENT I.
TOMAHAWK	249	724.8	324	790.5	410	908.1	Anti-ship (TASM) and Nuclear land attack (TLAM-N) versions operational. Conventional Land Attack (TLAM-C) under development. Launched from surface ships and submarines. TASM uses modified HARPOON guidance system. TLAM models use inertial and terrain matching guidance system. Competitive dual source procurement.
HARPOON	370	286.3	94	139.9	204	197.1	Ship, submarine, aircraft launched anti-ship cruise missile. Radar guidance system. Standoff land attack launched from aircraft.

itemize the fiscal year 1987 budget request for missiles and torpedoes.

The submarine based strategic ballistic missile force is the cornerstone of the nation's nuclear deterrent and the most survivable element of the Strategic Triad. Fiscal year 1987 marks the first year of procurement of the Trident II missile. Introduction of TRIDENT II missiles will enhance greatly the credibility of the Triad through increased payload and accuracy. The TRIDENT II, which will replace POSEIDON and TRIDENT I missiles, has a scheduled initial operational capability of 1989. It will be installed in all OHIO class submarines commencing with the ship funded in FY 1981 and will be backfitted in all earlier Ohio class submarines during their first overhaul. Trident II funding requested (Figure 4) in FY 1987 will support the initial production of 21 Trident II missiles and associated guidance and instrumentation systems; procurement of reentry systems and production support.

Also shown in Figure 4 is the Navy's funding request for TOMAHAWK and HARPOON cruise missiles.

The TOMAHAWK Cruise Missile Weapons System is a family of long range missiles consisting of nuclear land attack, conventional land attack and conventional anti-ship variants that can be launched from both non-strategic submarines and a variety of surface platforms. TOMAHAWK distributes our offensive capability over a large number of launch platforms, enhancing both our conventional and nuclear posture in a cost effective manner. With the deployment of this significant weapon system in our battleships, cruisers, destroyers and submarines the Navy is moving from 15 offensive strike platforms (aircraft carriers) to more than 195 strike platforms.

Steady progress is being achieved in the introduction of Tomahawk capability into the fleet. By the end of calendar year 1985 there were eight surface ships and 15 submarines were certified to employ TOMAHAWK. An additional six surface ships and 10 submarines are planned for certification in calendar year 1986.

TOMAHAWK missiles are dual source produced by both General Dynamics, Convair Division, of San Diego, California, and McDonnell Douglas Astronautics Company, of St. Louis, Missouri. This dual source of competitive procurement enables us to maintain a high level of production capability for TOMAHAWK procurement in the years to come. This production base offers the potential for increased production rates, if required.

The Vertical Launch System on board surface ships is now undergoing OPEVAL by COMOPTEVFOR. Initial Operational Capability of the vertical launch system is planned for Spring 1987. The Capsule Launch System on all SSN-688 class submarines (commencing with the SSN-719) has commenced full-scale engineering development.

The TOMAHAWK Land Attack Missile with submunitions dispenser (TLAM/D) is being ground tested. Operational Test and Evaluation will be conducted in 1987, with Initial Operational Capability for TLAM-D planned for Fall 1987.

HARPOON is a versatile anti-ship missile which is launched from ships, submarines and aircraft. This hard hitting, radar guided weapon has demonstrated high reliability and effectiveness in tests and fleet exercises. This year's request contains funding for a new variant of the Harpoon missile, the Block I C variant, with improved guidance and missile employment capabilities. In addition, the Navy has initiated a new standoff air launched land attack strike weapon called the Advanced Strike Weapon System (ASWS). This weapon utilizes the Harpoon propulsion and warhead sections with an IIR Maverick seeker, GPS mid-course section and a Walleye data link. Launched from the A-6 and F/A-18, ASWS provides a medium range, standoff land attack capability.

Figure 5 provides a summary of our request for PHOENIX, SPARROW and SIDEWINDER air-to-air missiles. AIM-54C PHOENIX, carried by the F-14 interceptor provides long range capability against high speed, high altitude targets including the unique ability to conduct near-simultaneous multiple engagements against incoming targets. AIM-7M SPARROW is a medium range missile carried by both the F-14 and the F/A-18. This latest variant of SPARROW incorporates a low altitude active fuse and a target seeker featuring improved missile guidance performance in electronic countermeasures environment. The AIM-9M SIDEWINDER, the latest variant of this widely used short range air-to-air missiles, provides improved infrared countermeasure capability compared to earlier versions.

Production problems with Phoenix missiles at the HUGHES AIRCRAFT Co., Tucson plant, have received wide publicity over the past two years. Now, however, Hughes' production quality has recovered. Contractor quality assurance is now acceptable to the Navy. We will continue to monitor production quality of Phoenix missiles to assure ourselves that high quality missiles continue to be produced and production problems do not recur. As a result of Hughes' production problems, Phoenix deliveries throughout 1985 were lower than expected (86 vice 153 projected); however, as required retraining of the contractor's labor force has been completed and parts pipeline/production control deficiencies have been overcome, we expect production rates to stabilize in 1986 at 30 per month.

PHOENIX is the most sophisticated and capable air-to-air missile in the world today. Because of its crucial contribution to fleet air defense and our low inventory, the Navy is taking initiatives to achieve competitive dual source procurement of PHOENIX by 1989. The fiscal year 1987 funding request includes $149 million for 56 second source missiles and the engineering work necessary to support this effort. The Navy is evaluating Ford Aerospace and Raytheon proposals to become second source producers. In this regard, the Phoenix second source program will seek OSD Cost Analysis Improvement Group (CAIG) certification in May of this year. Once certification is obtained the Secretary of Defense will request Congressional approval to continue with the second source program as required by the joint House Appropriations Committee/Senate Appropriations Committee FY-86 conference report. The second source program will result in directed production from the second contractor in fiscal 1987 and 1988. Full competition will commence with the fiscal 1989 procurement.

As shown in Figure 6, the Navy procures five air-to-ground missiles with WPN funding. These weapons are employed by Navy and Marine Corps tactical aircraft to perform their combat attack missions, including anti-ship operations, ground support, defense suppression and interdiction.

In FY 1987, the Navy is requesting funds for two anti-radiation missiles. Both weapons enhance the survivability and flexibility of our tactical air platforms and will improve their ability to carry out strike and suppression missions in the face of projected defenses. The first, HARM, is a High speed, Anti-Radiation Missile to destroy or suppress land and sea-based radars supporting enemy air defense systems. HARM corrects the operational deficiencies prevalent in earlier anti-radiation missiles through increased speed, greater range, a low smoke rocket motor, improved sensitivity, in-flight retargeting, and the frequency band coverage needed to counter the current threat. Between May 1985 and January 1986, HARM has had eleven consecutive successful test flights. This test program has

Figure 5

ORDNANCE SUSTAINABILITY PROCUREMENT: AIR-TO-AIR MISSILES

	FY 1986		FY 1987		FY 1988		
WEAPON	**QUANTITY**	**COST**	**QUANTITY**	**COST**	**QUANTITY**	**COST**	**NOTES**
PHOENIX (AIM-54C)	265	348.8	205	317.7	430	440.9	All weather, long range Semi-active, mid-course guidance. Specifically designed for F-14. "C" version in production since 1980.
SPARROW (AIM-7M)	1948	340.7	1716	279.4	1594	271.6	Semi-active guidance medium range. Used by F-14, F/A-18. Modified version, RIM-7M, used by surface ships in NATO Sea Sparrow point defense system.
SIDEWINDER (AIM-9M)	2120	107.0	627	64.6	488	52.2	Short range. Infrared seeker. Used on all fighters and many attack aircraft. Latest version includes improved anti-countermeasures capability and enhanced capability against targets in "IR cluttered" background.

Figure 6

ORDNANCE SUSTAINABILITY PROCUREMENT: AIR-TO-GROUND MISSILES

	FY 1986		FY 1987		FY 1988		
WEAPON	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
HARM (AGM-88A)	825	224.4	1110	256.7	1492	336.6	Succeeds Standard ARM and SHRIKE as primary anti-radiation, defense suppression missile. Increased velocity, greater range, improved sensitivity. Used by A-7E, F/A-18, A-6E aircraft.
SIDEARM	200	29.0	256	22.9	255	23.7	Short range anti-radiation missile. Converted from early SIDEWINDER missiles. Planned for MARINE CORPS AH-1 helicopters.
LASER MAVERICK	1500	164.9	1800	198.8	575	72.0	Semi-active laser guidance. Penetrating, blast-fragmentation warhead. Used for close air support, battlefield interdiction.
IIR MAVERICK (AGM-65F)	195	26.4	419	52.1	927	91.3	Infrared seeker, optimized for ship targets. Warhead and fuze same as LASER MAVERICK. Will be used by A-6, A-7, F/A-18, AV-8B.
HELLFIRE	1304	49.2	-	-	1824	62.5	Semi-active, laser guided anti-armor weapon for Marine Corps AH-IT/J helicopters. Procured through Army.

demonstrated HARM's ability to be launched at supersonic speed by an F/A-18 and obtainment of projected performance specifications.

The FY 1987 request contains funding for the SIDEWINDER Anti-Radiation Missile or SIDEARM. SIDEARM is a short range, limited frequency band, anti-radiation missile being developed for employment on the Marine AH-1 helicopters to counter point defenses. Existing AIM-9C guidance and control sections are modified to provide the missile's air-to-ground homing capability. The remainder of the missile consists of current production SIDEWINDER components.

Funding for two versions of the MAVERICK missile is requested in FY 1987. The first, LASER MAVERICK, is an air-to-surface short range missile which will be used in the close air support/battlefield interdiction mission within the Amphibious Objective Area (AOA) and in deep support for the destruction of targets outside the AOA. The missile is a variant of the Air Force's TV MAVERICK modified to incorporate a semi-active laser seeker, a larger (300 lb. vs 125 lb.) general purpose blast/penetration warhead with a selectable delay time fuze, and a reduced smoke rocket motor. While planned primarily for Marine Corps use, it will be employed with a single rail launcher adaptable to both Navy and Marine Corps tactical aircraft. The second, IIR MAVERICK (AGM-65F), is an air-launched, direct attack weapon for day or night use against ship and land targets. The seeker is imaging infrared, similar to the Air Force IIR MAVERICK. It incorporates the same warhead and reduced smoke motor used in LASER MAVERICK. This missile will be fired from the A-7, F/A-18, and A-6 aircraft.

The final air-to-ground missile procured in WPN is HELLFIRE. HELLFIRE is a semi-active, laser guided missile which will be used on USMC AH-1 helicopters as an anti-armor weapons. Its laser fire control system allows increased aircraft maneuverability during the attack phase so that a flight path can be used which minimizes exposure to enemy ground fire. This weapon is procured through the Army. Navy procurement was initiated in FY 1985, continued in FY 1986 and was planned in FY 1987. However, FY 1987 procurement was not funded in response to an Army production problem. Our intention is to stretchout FY 1986 HELLFIRE procurement through FY 1987 and again procure Hellfire in FY 1988.

SURFACE-TO-AIR-MISSILES

The STANDARD family of area defense missiles (Figure 7) provides the Navy's surface-to-air defense against enemy aircraft and cruise missiles. In recent years, STANDARD missile has been procured in three versions; SM-1 Medium Range (MR) Block VI, SM-2 Medium Range (MR) Block II, and SM-2 Extended Range (ER) Block II.

As shown in Figure 7, our entire fiscal year 1987 request is for the SM-2 Block II versions of STANDARD. Given the need to build up our inventories of this variant of the missile to match new cruiser deliveries, and the pressure of financial constraints, we have elected to stop further procurement of SM-1. This decision allows us to consolidate STANDARD missile production to the SM-2 (MR) and (ER) product lines which we intend to procure from dual sources. Establishment of second sources for major components of STANDARD missile expands our production base and enables us to realize the economic advantage of competition. Our existing inventory of SM-1 is adequate for the foreseeable future. In addition we plan to provide the 51 ships in the FFG-7 class with the ability to fire the more capable SM-2 commensurate with projected threat improvements and in phase with the draw down of our SM-1 missile inventory.

The SM-2 missile incorporates longer range, improved accuracy, improved

Figure 7

ORDNANCE SUSTAINABILITY PROCUREMENT: SURFACE-TO-AIR MISSILES

WEAPON	FY 1986 QUANTITY	FY 1986 COST	FY 1987 QJANTITY	FY 1987 COST	FY 1988 QUANTITY	FY 1988 COST	NOTES
SM-2 (MR) BLOCK II	846	517.8	844	513.6	850	512.7	Medium range air defense weapon for TICONDEROGA class AEGIS cruisers, ARLEIGH BURKE class AEGIS destroyers, KIDD, CALIFORNIA, VIRGINIA classes with New Threat Upgrade (NTU) conversion, and OLIVER HAZARD PERRY class frigates with the SM-2 conversion.
SM-2 (ER) Block II	470	319.8	350	217.0	400	234.5	Extended range area defense weapon for LEAHY, BELKNAP, BAINBRIDGE, TRUXTUN, LONG BEACH class cruisers with NTU conversion.
RAM (Rolling Airframe Missile)	-	-	50	63.2	102	78.4	Provides close range anti-missile defense. Dual mode passive radar frequency/infrared guidance. Will equip variety of combatants, amphibious and auxiliary ships.
Stinger	-	-	685	51.9	-	-	Lightweight, shoulder fired infrared homing guided missile designed as protection against anti-terrorist threat aircraft.

fuzing and warhead, and greater electronic countermeasure resistance. We plan to incorporate additional low altitude fuze enhancements in FY-88 production missiles. These missiles will be assigned the next sequential block upgrade designation, Block III.

The SM-2 (MR) Block II/III missile will be the primary air defense weapon for 27 TICONDEROGA class AEGIS cruisers, 29 ARLEIGH BURKE class AEGIS destroyers, the 10 ships in the CALIFORNIA, VIRGINIA, and KIDD classes that will receive the TARTAR new Threat Upgrade (NTU) conversion, and, in the future, the 51 OLIVER HAZARD PERRY class guided missile figates. The SM-2 (ER) Block II/III missile will be the primary air defense weapon for 21 guided missile cruisers and one guided missile destroyer planned to received the TERRIER New Threat Upgrade conversion. When teamed with our AEGIS and NTU combatants, SM-2 provides the ability to conduce simultaneous multiple engagements against high and low profile missiles and aircraft. This capability is essential to counter the sophistication and numbers of weapons we face in potential air threats now and into the 1990's.

The Rolling Airframe Missile (RAM) is a joint program with the Federal Republic of Germany. RAM is a high firepower self defense system against anti-ship capable missiles. It employs a sequential passive radar frequency/infrared guidance system. This system will be installed aboard combatants, amphibious ships and auxiliaries to complement other anti-missile systems such as PHALANX and SEA SPARROW. RAM can be fired from a 21 cell RAM launcher or from SEA SPARROW launchers with two cells modified to hold 5 RAM missiles each. The RAM missile and its two launchers are now in full scale develoment. The fiscal year 1987 request contains $63.2 million for the procurement of 50 missiles, tooling and special test equipment. The Navy plans dual source procurement of RAM on a cooperative basis with the FRG under a Memorandum of Understanding being negotiated that is based upon the provisions of the recent legislation regarding NATO cooperative projects.

The final surface-to-air missile requested in FY 1987 is STINGER. Stinger is a lightweight, portable air defense missile systems, fired from the shoulder. It utilizes an infrared homing guidance system to counter anti-terrorist aircraft.

TORPEDOES

As displayed in Figure 8, this year's budget request contains funding for the procurement of two heavyweight torpedoes used by submarines and two lightweight antisubmarine torpedoes employed by surface combatants and aircraft. The decision to procure a second heavyweight torpedo results from tactical and cost tradeoff considerations while the lightweight torpedo procurement reflects the Navy's transition from the MK 46 to the MK 50 torpedo.

The Navy is continuing the process of introducing the submarine launched MK-48 Advanced Capability (ADCAP) heavyweight torpedoes as the front line replacement for the MK-48 Mod 4 torpedo. The MK 48 ADCAP provides us a substantial improvement in capability over the MK 48 Mod 4. Changes in the guidance and control system improve the weapon's effectiveness against quiet submarines. Advanced technology will provide improved performance under ice, in shallow water, in high seas and in conditions of strong thermal gradients. Moreover, improvements in propulsion will give us the speed and deep diving capability required to counter the current and developing threat. This torpedo will meet the challenge of the deep diving, high speed submarine through the 1990's and is essential to maintaining the tactical advantage for our attack submarine force. Dual source competitior is included in the MK 48 ADCAP procurement strategy. Last year's budget included funding for production of 12 qualification units from the second source.

FIGURE 8
ORDNANCE SUSTAINABILITY PROCUREMENT: TORPEDOES AND OTHER ASW WEAPONS

	FY 1986		FY 1987		FY 1988		
WEAPON	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
MK-48 ADCAP	123	395.9	227	508.4	296	552.6	Most advanced sub-launched heavyweight torpedo. Capable against surface and submerged targets.
ASUW Torpedo	-	-	34	17.0	110	30.9	Low cost sub-launched anti-surface ship torpedo.
MK-46 NEARTIP	500	118.9	500	97.9	500	87.7	Current front-line lightweight ASW torpedo used by aircraft, helicopters, surface ships. Will remain in service through mid-90's.
MK-46 MODS	672	81.0	672	85.4	319	54.5	Commencing FY 1986, converts early models to NEARTIP configuration.
MK 50	-	-	84	109.9	204	346.9	Advanced lightweight ASW torpedo to be used by aircraft, helicopters and surface ships. Will meet current and forecast threats through the year 2000.
Vertical Launched Asroc	-	-	200	74.3	300	73.5	ASW standoff weapon capability for CG-47, DDG-51 and DD-963 with Vertical Launching Systems.

Actual familiarization of two follower contractor candidates began in September 1985 and final selection of the second source will occur in March of this year. Our fiscal year 1987 request includes funding for the procurement of 50 directed pilot production torpedoes from the second source. Full competition will commence in fiscal year 1988.

While the MK 48 ADCAP and MK 48 Mod 4 are designed for the dual role of antisubmarine and antisurface warfare, these torpedoes are more sophisticated than what is needed against non-ASW-threat shipping. Accordingly the Navy decided to procure a low cost antisurface warfare (ASUW) heavyweight torpedo to engage such threats. Our acquisition strategy plans the use of off-the-shelf technology with the costs of prototype development borne by the prospective contractors. Competitive procurement using fixed-price-type contracts will be structured to achieve the lowest realistic with the prime contractor candidates will be required to procure subsystems and components through competition at the subcontractor level. The FY 1987 WPN funding profile provides for award of two competitive contracts each of which will include procurement of 7 prototype units and full funding for 20 production units. Evaluation of the initial prototypes will enable us to select the contractor who will continue with fabrication and testing of 20 deliverables. This acquisition strategy is critical to support a FY 1989 IOC. Follow on procurement will be accomplished through a three year multi-year contract for fiscal years 1988-1990.

The fiscal year 1986 appropriation approved a second, three year multi-year procurement for the Navy's MK-46 torpedo and MK-46 torpedo modification program. The total procurement package consists of 1500 new MK 46 MOD 5 Neartip or Near Term Improvement torpedoes and 1663 conversion kits. Funding in this year's request procures 500 new NEARTIP torpedoes and 672 conversion kits. It is our projection that the approved multi-year procurement will result in a savings of $51.4 million compared to three annual buys of similiar size. Of equal importance, this procurement will provide an adequate lightweight torpedo inventory well into the 1990's and ensure the maintenance of a lightweight torpedo industrial base as we transition to production of the MK 50 torpedo.

Fiscal year 1987 contains our first request for procurement of the MK 50 torpedo. Exploiting new technology, the MK 50 provides a lightweight torpedo with enhanced performance and lethality for the air and surface ASW forces. It is designed to counter all known and forecast submarine threats through the year 2000. MK 50 torpedo procurement will include development of a qualified second source to be brought online for full competition in FY 1990. Specifically, fiscal year 1987 includes $10.6 milion while fiscal year 1988 will include $11.1 million for the second source qualification process, in particular engineering technology transfer efforts.

This year also contains our first request for procurement of the Vertical Launched Asroc (VLA). The VLA provides a standoff ASW weapon capability for our newer surface combatants, the CG-47, DDG-51 and DD-963 classes configured with Vertical Launching Systems. VLA is a rocket propelled ASW torpedo and will be configured for either the MK 46 or MK 50 torpedo as a payload. VLA will offer substantial increases in range and effectiveness over the earlier above-deck Asroc System. The program is structured toward early competition. Within our FY 1987 budget request, $20.9 million is required for the procurement of 60 VLA second source qualification missiles. This acquisition strategy will support full competition in FY 1989.

READINESS PROCUREMENT

Realistic peacetime training is the sine quo non of successful combat readiness. Within WPN, readiness funding pays for targets used in fleet training, rework of weapons used in training, the support of training ranges, and spares.

Figure 9 displays procurement requested for weapon targets. In FY 1987 the Navy is requesting funding only for Aerial Targets, including the versatile AQM-37C. This supersonic target can replicate a variety of aircraft and missile profiles to exercise combat systems of both ships and aircraft. Procurements funded through the FY 1986 appropriation provide a satisfactory inventory level among our underwater targets. Accordingly additional procurements are not included in our FY 1987 request.

Readiness procurement associated with missile testing, rework and ASW training is displayed in Figures 10 and 11.

Although TRIDENT I and POSEIDON missiles are no longer being procured, funding is required to support missile readiness flight tests necessary throughout the operational lives of the weapons. The 1987 budget request will also procure Department of Defense components supplied to the Department of Energy for warhead assembly. The reduction in the Trident I request compared to that of fiscal year 1986 reflects retention of unobligated prior year funds for application to FY 1987 requirements in lieu of seeking new FY 1987 obligational authority.

Shown in Figure 11 is the Navy's request for ASW readiness support funding. Most anti-submarine weapons used in training are recovered, as contrasted to missiles, which are expended in the course of firing exercises. The Torpedo Support Equipment funding line procures components and supplies necessary to rework MK-46 and MK-48 torpedoes after training and test firings. Similarly, the ASROC funding line replaces ASROC components expended in exercises. The amount of funding required in both lines is directly related to fleet training requirements. ASW Range Support funding provides training range devices and weapon proofing equipment used to support operations at the Navy's eight underwater ranges. A majority of the range support funding supports training exercises, with the balance dedicated to acceptance proofing of new and reworked weapons and test projects related to service weapons.

SPARES

Spares procurement is a vital element of weapons readiness. WPN spares and repair parts are in two categories. Initial and Replenishment spares are procured to support the operating forces and the industrial activities which repair weapons. The quantities of initial spares required is determined in proportion to the number of end items such as torpedoes and guns which are procured. Funding for replenishment spares is based on the number of weapon overhauls required and the historical failure rate of weapon components. As noted earlier, FY 1987 is the second year in which spares procurement has been segregated into a separate budget activity within the WPN appropriation. While it is premature to determine the specific impact this segregation will have on management improvement of spares procurement, it is fully anticipated that the Navy's warfighting capabilities will be enhanced by this change in procurement strategy. The Navy's request for spares funding is $150.7 million in fiscal year 1987. This funding level represents 3 percent of our total WPN request and provides the capability to maintain our weapons in the highest state of combat readiness.

WARFIGHTING IMPROVEMENT

Figure 12 shows the WPN line items related to warfighting improvements for gun systems, small arms and mine systems.

FIGURE 9

READINESS PROCUREMENT: AERIAL AND ASW TARGETS

	FY 1986		FY 1987		FY 1988		
SYSTEM	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
AERIAL TARGETS	-	93.2	-	97.4	-	104.0	Procures powered, remote controlled targets and towed targets for aircraft and ship training. Also used in RDT&E.
MK-38 MMT	1200	3.2	-	-	-	-	Mini Mobile Target Expendable ASW target for open ocean training of surface ships. Inventory supported final procurement in FY 1986.
MK-30 MOBILE	6	17.7	-	-	12	39.4	Reusable, sophisticated target. Used for training and testing on instrumented ASW ranges.

FIGURE 10

READINESS PROCUREMENT: STRATEGIC MISSILE SUPPORT

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
TRIDENT I	34.4	4.7	16.3	Funding supports procurement of reentry body components, test instrumentation for flight testing of missiles and production support.
POSEIDON	4.8	4.0	3.4	Flight testing support, warhead components.

FIGURE 11

READINESS PROCUREMENT: OTHER MISSILE AND FLEET TRAINING SUPPORT

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
OTHER MISSILE SUPPORT	11.7	22.0	21.7	Funds maintenance, support, test equipment for SUBROC ASW missile and missile launch-transportation canisters associated with Vertical Launch System.
TORPEDO SUPPORT EQUIPMENT	44.8	32.5	36.1	Maintains warshot inventories in operational status. Funds components required to rework torpedoes after exercise firings.
ASW RANGE SUPPORT	22.0	20.1	23.2	Provides for support and maintenance of Navy's underwater ASW tracking ranges used for training and testing. Procures necessary equipment, production support services, and range proofing for new equipment.
ASROC	14.2	13.6	13.7	Replacement components for ASROC missiles used in tests, training.

FIGURE 12

WARFIGHTING IMPROVEMENT: GUN SYSTEMS, SMALL ARMS, MODIFICATION PROGRAMS

	FY 1986		FY 1987		FY 1988		
SYSTEM	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
MK-15 CIWS	39	139.3	27	105.6	9	43.1	PHALANX Close In Weapon System. Fast reaction, autonomous, 20MM gun system for terminal defense against cruise missiles and aircraft.
MK-15 CIWS Modifications	-	29.9	-	43.0	-	54.7	BLOCK I modifications increase magazine capability and search evaluation angle to counter new threats. Other modifications enhance operability, maintainability and reliability.
MK-75/76MM Gun Mount	6	17.0	5	14.9	-	-	Procures guns for modernization of Coast Guard cutters and maintenance pool for Navy/Coast Guard ships.

144

FIG 12 (CONTINUED)

	FY 1986		FY 1987		FY 1988		
SYSTEM	QUANTITY	COST	QUANTITY	COST	QUANTITY	COST	NOTES
MK-19/40MM	56	1.1	25	.6	25	.6	Machine gun which fires 40MM grenades. For use by patrol boats, SPECWAR units, construction battalions.
25 MM Gun Mount	29	5.1	22	3.9	22	4.3	Army 25MM Bushmaster cannon on MK-88 Naval Mount. Replacement for 20MM gun on patrol boats, amphibious and auxiliary ships.
Gun MODS	-	19.1	-	14.3	-	13.3	Operability, reliability, safety modifications for 16 inch/50 CAL, 5 in/54 CAL, 40MM, 25MM guns.
Small Arms	-	10.8	-	10.1	-	10.7	Procurement and modernization of weapons 50 CAL and below.
CAPTOR MODS	-	14.9	-	11.6	-	12.3	Conversion of MOD 0 versions to improved capability MOD 1. Reliability upgrade for all MODS.

This is the tenth year the PHALANX CIWS has been procured through the WPN account. The Navy plans to install a total of approximately 670 systems aboard ship, of which 389 will be procured with WPN funds. Our CIWS testing program, one of the most rigorous ever conducted by the Navy, has demonstrated that PHALANX is an effective system for terminal defense against low-flying anti-ship missiles or aircraft that penetrate fleet area defense. All PHALANX systems procured with fiscal year 1987 funds will be BLOCK 1 configuration, introduced into production in 1986. BLOCK 1 improvements include increased search elevation capability and expanded on-mount magazine capacity. The CIWS modification program request in the FY 1987 totals $43.0 million, $32.3 million will buy kits to backfit BLOCK 0 systems to BLOCK 1, $10.0 million is for modifications to enhance the reliability and maintainabilty of CIWS system, and $.7 million is for modifications to training devices.

Because of the increased air threat throughout the Middle East, the Navy has completed CIWS installations on all ships scheduled to mount CIWS prior to sailing for that region. Additionally, systems earmarked for non-deploying ships have been diverted to near-term deployers. By the end of 1986, a total of 39 deploying ships will have received accelerated installation of CIWS.

The MK-75 76MM gun mount is installed on new construction Navy FFG-7 class guided missile frigates, patrol combatant hydrofoils (PHM) and Coast Guard Bear Class cutters. It is being installed on Coast Guard HAMILTON class cutters as part of their mid-life modernization. In fiscal year 1987, one of the five gun mounts requested is for a Hamilton class cutter. The remaining four mounts will form part of a rotatable maintenance pool to support all ships armed with the MK-75. The maintenance concept for these ships is based on the periodic replacement of the gun mount on a six year cycle. The removed gun mount is then renovated at a shore facility and in its turn replaces another shipboard mount. This strategy is essential because the ships classes involved are maintained through short industrial availabilities which do not allow time for onboard overhaul of the gun during the availability.

Short range, high volume firepower is important to a variety of Navy ships, patrol craft, and shore units. The MK-19 MOD 3 40 MM machine gun and the MK 381 25MM gun described in Figure 12 satisfy this requirement. The MK-19 MOD 3 fires 40MM grenades to a maximum range of 2400 yards. It is an effective close range defensive weapon for auxiliary and amphibious ships, patrol craft, and construction battalions. The 25MM gun system will replace obsolete 20MM MK-16 guns as the main battery for 65 foot patrol boats and as general purpose short range armament for new construction amphibious and auxiliary ships. Both weapons are obtained through multiservice procurement programs.

The FY 1987 WPN funding request for Small Arms continues the Navy's emphasis on procurement of various weapons essential to base and ship protection in addition to outfitting our expanding special warfare forces. Of the $10.1 million requested in FY 1987 to procure a variety of machine guns, mortors, rifles and the 9MM pistol, $9.6 million is earmarked for fleet and fleet support activities.

In his Fiscal Year 1987 Posture Statement, the Chief of Naval Operations used the term "violent peace" to categorize the current world political climate. Terrorists continue to expand their activities and have the potential to be felt almost anywhere with deadly effect. In consequence, the Navy has an expanding requirement to provide security for naval ships and installations at home and abroad. Similarly, the Navy's Special Warfare Forces, such as Seal Teams and Special Boat Units, have a range of capabilities which could be pivotal in either antiterrorist actions or in rapidly developing contingency operations in support of U.S. interests.

The Gun Modification Program funds several types of actions: ordnance alterations (ordalts) provide hardware to correct safety and shock deficiencies, which improve operability, reliability, maintainability, and system availability of all gun systems from the 16 inch/50 caliber down to the 20 MM gun. Alterations are developed in direct response to reports from the fleet.

Although procurement of new CAPTOR mines ended in fiscal year 1986, funding for CAPTOR modifications is requested in FY 1987 to support a continuing program of baseline MOD 0 CAPTOR conversions to the MOD 1 configuration. The Mod I configuration provides improved detection capabilities. In fiscal year 1987, the Navy request is for 102 kits at a cost of $11.6 million.

The WPN appropriation supports those space systems which improve our warfighting improvement. As can be seen in Figure 13, WPN now procures and supports two categories of satellites. Fleet Communications Satellites (FLTSATCOM) provide ultra high frequency service to ship and various other DOD users. Fiscal year 1987 funding of $65.1 million includes funds to support launch of the eighth of the first generation satellites and long lead procurement for the second generation communication satellites. The Defense Meteorlogical Satellite Program (DMSP), is a joint service program with the Air Force serving as Executive Agent. The objective of DMSP is to provide orbital sensors for the measurement of atomospheric and oceanographic parameters. Funding in FY 1988 supports Navy procurement of two Special Sensor Microwave Imagers (SSM/I), a component of the satellite which will provide a new capability to monitor rain rate and soil moisture and an improved capability to measure atmospheric water vapor and polar ice parameters. The Astronautics program which in previous years had been funded by WPN is supported by the O&M,N appropriation commencing this year.

The missile modifications funding request shown in Figure 14 aggregates the programs for POSEIDON, TOMAHAWK, HARPOON, PHOENIX, SPARROW, STANDARD and SIDEWINDER. Missile modifications include a number of essential actions to improve the warfighting capabilities of these systems. All missiles receive performance, reliability, maintainability and safety alterations based on testing results and fleet feedback. Some modification programs lead to dramatic increases in operational capability. The SIDEWINDER modifications, for example, include actions to upgrade earlier AIM-7H/L models to the AIM-7M standard. The modification request covers essential expenses to ensure that our missile inventory, which represents a major long term investment in warfighting sustainability, remains reliable and capable of defeating an even developing threat.

SUMMARY

We believe the Navy's fiscal year 1987 WPN request is balanced, affordable and so constructed as to meet the needs of the Navy and the nation. Our overriding emphasis in this year's WPN request is ordnance sustainability to ensure that we attain our strategic and tactical weapons inventory goals as rapidly as possible consistent with overall fiscal realities. We have funded the readiness account -- including TRIDENT I, aerial targets, range support, and spares -- at a level which will provide the fleet with the training and material availability essential to tactical proficiency. Warfighting improvement funding, the smallest sector within WPN is selectively targeted at our most pressing requirements --close-in air defense, anti-terrorist security, and an expanded special warfare capability.

FIGURE 13

WARFIGHTING IMPROVEMENT: SPACE SYSTEMS

PROGRAM	FY 1986	FY 1987	FY 1988	NOTES
Fleet Satellite Communications	53.1	65.1	118.3	Launch support for last of first generation satellites and long lead procurement for second generation communications satellites
Defense Meteorlogical Satellite	-	-	16.8	Funds Navy's share of components for DOD weather satellites system. Cooperative program with USAF.

FIGURE 14

WARFIGHTING IMPROVEMENT: MISSILE MODIFICATION AND INDUSTRIAL FACILITIES

Missile MODS	59.6	13.8	42.8	Procures components to upgrade performance of models and incorperate safety, maintainability, reliability improvements.
Weapons Industrial Facilities	23.7	7.5	10.3	Capital rehabilitation and emergency repair of equipment, civil works, buildings at Navy owned Naval Industrial Reserve Ordnance Plants (NIROPs).

Within WPN we have pursued a policy of establishing second sources in each program possible. The benefits of competition, both financial and military, are clear. The SPARROW and SIDEWINDER programs are examples of our progress in using procurement competition to advantage. Competition within PHOENIX, MK 48 ADCAP, MK 50 Advanced Lightweight torpedo, ASUW torpedo, STANDARD missile, RAM and Vertical Launched Asroc are expected to add to the Navy's ongoing success story.

Ordnance and support material procured by the WPN appropriation provides the key to the fleet's ability to carry out prompt sustained combat operations at sea in support of the national interest. Your support of this year's budget will enable us to continue the steady progress toward full readiness and sustainability which has marked the preceding years of this decade.

REAR ADMIRAL
ROBERT H. AILES
UNITED STATES NAVY

Born in San Francisco, California, Rear Admiral Ailes attended public schools in Arlington, Virginia; Washington, D.C.; Long Beach, California; and Norfolk, Virginia. He entered the United States Naval Academy in June 1953 and graduated and was commissioned on 7 June 1957.

Rear Admiral Ailes' first sea assignment was on USS WILLARD KEITH (DD 775) in the Atlantic Fleet. Subsequent sea assignments include duty as Operations Officer of the USS CONYNGHAM (DDG 17) and Commanding Officer of the USS HAMMERBERG (DE 1015) and USS VIRGINIA (CGN 38) in the U. S. Atlantic Fleet; and Executive Officer of the USS LONG BEACH (CGN 9) and USS SOMERS (DDG 34), and Commanding Officer of the USS BROOKE (FFG 1) in the U. S. Pacific Fleet. In addition, Rear Admiral Ailes served as Operations Officer on the Staff of Destroyer-Division 222.

Shore duty assignments include postgraduate education at the Naval Postgraduate School in Monterey, California, where Rear Admiral Ailes received a Masters Degree in Operations Analysis; Nuclear Engineering Training at Bainbridge, Maryland, and West Milton, New York; duty as Commanding Officer and Director of the Officer Department of the U. S. Naval Nuclear Power School at Mare Island, California; duty in Washington as the Director of the Naval Forces Division in the Office of the Assistant Secretary of Defense for Systems Analysis, and Director of the Anti-Air Warfare Division in the Office of the Director for Naval Warfare.

Rear Admiral Ailes assumed his present position as Director, Surface Combat Systems Division in the Office of th Deputy Chief of Naval Operations for Surface Warfare in May 1985.

Rear Admiral Ailes is the son of Rear Admiral and Mrs. John W. Ailes of Pittsburgh, Pennsylvania. He is married to the former Clara Swift of Arlington, Virginia. They have two children: Susan and Lynn.

TOMAHAWK

Admiral **Ailes**. If possible, Mr. Chairman, I would like Admiral Hostettler to make a few remarks on TOMAHAWK since I understand that will be of some interest to this committee.

Mr. **Chappell**. Yes, sir. The committee would be pleased to hear the Admiral. We hear rumors that you may be trying to leave us.

Admiral **Hostettler**. I decided it was time for a young charger to come in and take over, sir.

Mr. **Chappell**. We have been putting out the word that you are a young charger.

Admiral **Hostettler**. Thank you, sir.

Mr. Chairman, if I may, I am Admiral Stephen J. Hostettler, Director of the Joint Cruise Missiles Project.

I am again pleased to have this opportunity to come before the committee and discuss the status of the TOMAHAWK weapon system.

With your perimission, Mr. Chairman, I would like to enter a formal statement into the record, provide you with a brief summarized oral review, and then stand by to respond to questions.

Mr. **Chappell**. We would appreciate your summarizing the statement.

Admiral **Hostettler**. My statement today will focus on the progress we have made over the past year as well as our future efforts and the status of missile dual source competitive production.

I would like to reemphasize at this time that in order to realize cost savings involved in the all-up-round competition under the fiscal year 1987 buy, a minimum procurement of 400 missiles—324 SLCMs and 76 GLCMs—is necessary to sustain the dual source.

Mr. **Chappell**. What are the numbers again?

Admiral **Hostettler**. The buy this year, as requested, is 400 missiles of which 324 are Navy and 76 are Air Force, and, of course, the Air Force initially had this year as their last. It looks as if now we will follow with some 39 in 1988.

When we entered into dual source, we said at that time that in order to make that a feasible plan to get payoff after the third year, we would want a base of 400 rounds to support that dual source competition and that is being requested this year.

In the two previous years of the competition, General Dynamics received 60 percent of the buy with McDonnell Douglas receiving 40 percent. McDonnell Douglas did, however, receive 70 percent of the recertification and rework refurbishment under the fiscal year 1986 contract.

Since I have last talked to this committee, we have continued to meet the planned commitment to our operating forces.

Significant activation progress has been made in support of our NATO commitment since my last update and this progress is continuous. As of the end of last year, 128 GLCMs have been deployed to bases in Belgium, Italy, and the UK and the deployment of the first GLCMs to Wueschheim Air Station in West Germany is taking place this month. In addition, the Dutch Parliament is expected to cast its final vote on deployment to the Netherlands later this month.

Now every NATO nation that agreed to accept GLCM at the 1979 NATO Defense Minister's meeting has honored that commitment. NATO's ability to respond to Soviet aggression with a credible theater nuclear force is now a reality.

In the case of our commitment to the fleet, eight surface ships and fifteen submarines now have been certified to carry TOMAHAWK. These numbers will be almost doubled during this calendar year and by the mid-1990s we will have more than 190 ships and submarines capable of carrying, and if necessary launching, all of the TOMAHAWK variants.

The TOMAHAWK nuclear land attack and the anti-ship have already achieved their initial operational capbility aboard both surface ships and submarines. The TOMAHAWK conventional land attack variant with the horizontal mode of attack was introduced into the fleet in limited numbers also, and this month we have achieved the initial operational capability of the terminal dive conventional land attack missile. This method of attack allows for increased effectiveness against a wider range of targets. The TLAM/C IOC has met the schedule which I briefed to you three years ago.

The conventional land attack TOMAHAWK, I believe, is the heart of the cruise missile program. Eventually this variant will employ both a single conventional warhead and a multiple submunitions (or bomblet) warhead. Its versatility, accuracy and 500 to 700-mile range is opening new options in naval warfare.

This weapon will both supplement and complement carrier-based aircraft in situations where aircraft attrition would be unacceptably high. The range of options available when TLAM/C is deployed in more significant numbers provides a viable conventional attack option which raises the nuclear threshold.

With the deployment of TLAM/C, we raise the nuclear threshold. With the deployment of TLAM/C, we increase the capability to deter nuclear warfare and to hold at risk targets ashore should deterrence fail. The nuclear variant enhances deterrence by providing a new threat spectrum to the Soviets through a worldwide strike capability achieved with minimum risk and cost.

To meet fleet requirements for greater standoff, we have, of course, begun to deploy the TASM in more significant numbers. This variant extends the standoff attack capability of surface ships and submarines by a factor of four to five, to an operational range of more than 250 miles.

We have accomplished much over the past year with TOMAHAWK, and yet there is still much to be done. We must now focus our attention on our new launching systems—vertical launch from both submarines and surface ships, which will provide even greater firepower to our fleet units at minimum cost.

We must also focus on the submunitions variant of TOMAHAWK planned for initial operation capability in September 1987, as well as upgrade in areas of theater mission planning, guidance, more powerful boosters to allow launches from greater depths and techniques for greater survivability.

I would like to point out that the projected overall program cost of the Navy TOMAHAWK program in the fiscal year 1987 President's budget has decreased by over $575 million, or 4 percent over that which we projected in the fiscal year 1986 President's budget.

$203 million of the $575 million reduction is due to the aggressive competitive acquisition strategy we are pursuing in the project, not only for the all-up-round missile, but for other critical components as well.

The Gramm-Rudman-Hollings bill reduced the fiscal year 1986 WPN by $38.4 million. This reduction was structured by delaying investments such as depot support equipment, documentation and engineering changes instead of missile acquisition.

This bill may cause impact on TOMAHAWK quantities in fiscal year 1987 procurement, but at this time the gross effect cannot be determined. If TOMAHAWK quantities are cut, the variant mix to be reduced will be structured to meet operational requirements.

Mr. Chairman, members of this committee, it is my personal opinion that nothing is more important that getting TOMAHAWK to sea. This weapon system, from a tactical point of reference, will revolutionize naval warfare in a most cost-effective way.

I thank you and I thank you for your continued support.

[The statement of Admiral Hostettler follows:]

PREPARED STATEMENT OF REAR ADMIRAL STEPHEN J. HOSTETTLER
DIRECTOR, JOINT CRUISE MISSILES PROJECT

Mr. Chairman and members of this committee, I am pleased to have this opportunity to come before you again this year to discuss the status and future plans for the TOMAHAWK weapon system.

During the past year we have continued to make steady progress. My statement today will focus on these improvements as well as future efforts. Also, I want to review the status of missile dual source competitive production and provide you with information concerning major milestones achieved or about to be achieved in the TOMAHAWK program.

BACKGROUND:

I would first like to point out that although problems involving a suspension at one of the TOMAHAWK contractor facilities, existed until recently, production operations continue to improve at both of our All-Up-Round primes. During the past year General Dynamics/Convair Division (GD/C) has maintained an aggressive management of internal and subcontractor production to achieve schedule and cost targets under difficult constraints. McDonnell Douglas Astronautics/Titusville (MDAC) division is on schedule toward achieving a competitive position with GD/C for All-Up-Round production resulting in reduced costs and better quality for the program.

We completed extensive evaluations of contractors' manufacturing proposals within the competitive environment this past year using analytical methods and actual experience to improve the resulting decisions. Although resource allocation has continued to pace some aspects of production, the Joint Cruise Missiles Project, along with exemplary support from our contractors, has been able to maintain the necessary flow of hardware. Our primes are now ready to transition into higher rate production. Figure 1 shows final TOMAHAWK assembly area at contractor facility.

To insure that these efforts are maintained we have continued to monitor our contractors with a series of production reviews ranging from formal Production Assessment Reviews (PARs) to informal assessments relating to specific issues. This activity will continue in the future.

As I stated last year, the Navy's challenge is to deter war or if deterrence fails, respond effectively to an enemy attack. Therefore, we must find ways to maximize our capability on current ships and in those that we are building to execute a broad range of operations. The TOMAHAWK Sea Launched Cruise Missile makes an important, cost effective contribution to this effort.

TOMAHAWK is not just a weapon, but a family of weapons systems consisting of several missile variants, launcher variants, and a complex mix of surface ship and submarine systems.

The three sea-launched missile variants which are now deployed with the fleet are the TOMAHAWK Anti-Ship Missile (TASM); the TOMAHAWK conventional armed land attack missile (TLAM/C); and the TOMAHAWK nuclear-armed land attack missile (TLAM/N). TASM is fully operational in submarines and on surface ships. We attained scheduled operational status of TLAM/N in June 1984. Conventional armed land attack missile installation with the horizontal mode of attack was completed on the battleship NEW JERSEY in March 1983 and the USS IOWA in April 1984. Figure 2 shows a TLAM/C striking its target on San Clemente Island following a flight of more than 500 miles in a test conducted in July 1984.

This TLAM/C fleet introduction involved missiles capable of a horizontal mode of attack only. The conventional armed land attack variant with terminal dive mode of attack, will be the production version. The terminal dive mode of attack, which allows for increased effectiveness against a wider range of targets, has completed operational evaluation successfully ahead of schedule and is ready for operational deployment later this month. (see figure 3).

All of these variants will be deployed on a variety of Naval platforms, current and future, including attack submarines, cruisers, destroyers and battleships. They will be fired from various launch systems -- from armored box launchers as on USS NEW JERSEY and USS IOWA today, attack submarine torpedo tubes as on current 688 class submarines and from vertical launchers planned for the SPRUANCE and ARLEIGH BURKE destroyers and follow-on 688 class submarines in the near future.

By placing this versatile family of weapons on a wide variety of surface ships and submarines, as shown in figure 4, we multiply our offensive force capability. This distributes our offensive capability beyond planned carrier force levels. It complicates Soviet planning by requiring them to consider every battle group ship a potential threat. This substantial capability contributes to deterrence of war and enhances the Navy's ability to respond effectively at any level of conflict if deterrence fails.

For example, the TOMAHAWK Anti-Ship (TASM) can inflict heavy damage with its single conventional warhead. TASM extends the standoff attack capability of surface ships and submarines by a factor of 4 to 5, to an operational range of 250 miles. Its wide area search capability enhances our ability to successfully target and attack enemy ships. Figure 5 shows a typical anti-ship mission.

The TOMAHAWK Conventional Land Attack Missile (TLAM/C), which I believe is the heart of the TOMAHAWK program, when installed in an array of surface ships and submarines will provide the Navy with a new strike capability. This weapon will employ both a single conventional warhead for use against both ship and various land targets depicted earlier in Figures 2 and 5 and a multiple submunition (or bomblet) warhead. Its versatility and 500 to 700 mile range is opening new options in naval warfare.

The conventional armed land attack missile will both supplement and complement carrier based aircraft in situations where aircraft attrition would be unacceptably high. The conventional armed land attack missile can permit a limited, measured response as an expression of U.S. will and determination without jeopardizing more expensive aircraft or pilots. It will also allow high leverage strikes against land targets from the majority of our attack submarines and surface combatants. The range of options available when TLAM/C is deployed in more significant numbers along with carrier aircraft provides a viable conventional attack option which raises the nuclear threshold.

TOMAHAWK NUCLEAR LAND ATTACK

The TOMAHAWK Nuclear Land Attack Cruise Missile (TLAM/N) as stated earlier was introduced into the fleet in June 1984. It carries a nuclear warhead to an operational range of 1500 miles. TLAM/N provides the U.S. Theater Commanders with an increased world wide capability to deter nuclear warfare and to hold at risk targets ashore should deterrence fail. The military utility of TLAM/N arises primarily for the distribution of significant offensive firepower through the deployment of TLAM/N on a large number of existing and programmed Navy submarines and surface ships. TLAM/N enhances deterrence by providing a new threat spectrum to the Soviets through a worldwide strike capability, achieved with minimum risk and cost. In addition TLAM/N supports our strategic deterrence objectives by contributing to the Nuclear Reserve Force.

In a land attack role, the combination of carrier aircraft and TLAM/N significantly improves the carrier battle group's flexibility and effectiveness. The increased strike range of a larger number of surface ships, operating under carrier air cover as well as independent covert forward-deployed submarines, presents the Soviets a formidable threat from a 360 degree axis against which they have no reliable defense. Thus, TLAM/N is ideally suited for a Nuclear Reserve Force (NRF) role. When dispersed on a large number of naval platforms, it provides a significant survivable and sustainable Non-Strategic Nuclear Force for the U.S. Theater Commanders while supporting the deterrence and NRF objectives of our national policy. It will also provide an increase in the range of escalation control options available to the National Command Authority (NCA) without resorting to strategic systems.

With TLAM/N in an operational status, the U.S. Navy has moved from a fleet centered on 14 strike platforms to a fleet with potentially more than 190 strike platforms able to hold at risk large land areas not currently covered by naval forces or any other theater forces. This force will substantially enhance deterrence by denying the Soviets any catalyst which could lead them to a conclusion that they could attain a favorable outcome from an initiation of hostilities.

Why does the Navy need TOMAHAWK? It is the most cost effective way of maximizing our fleet's capabilities to deter war, or force its earliest termination on terms favorable to the United States, if deterrence fails. In essence, TOMAHAWK will conserve valuable resources and save lives.

Now, I would like to enter into the present status of the TOMAHAWK system by platforms:

SUBMARINE LAUNCHED CRUISE MISSILE:

The submarine launched program continues on schedule, and at the end of CY 1985 there were a total of 15 capable SSN-688 and SSN-637 class submarines. The submarine program will continue its build-up with 10 TOMAHAWK upgrades scheduled for CY 1986. TOMAHAWK equipped submarines are now routinely deploying to several operational areas worldwide and are greatly enhancing the submarine firepower in its multi-mission role.

To support the submarine deployment of TOMAHAWK, submarine tender and shore facility upgrades have continued on schedule. At the end of CY85, there were seven submarine tenders and three shore facilities capable of supporting submarine operators with the upgrading of the Naval Magazine facility in Guam, Mariana Islands in process.

The submarine vertical TOMAHAWK, MK45 Capsule Launch System (CLS) is in the preproduction phase and has satisfactorily completed its developmental testing and is ready to proceed into technical evaluation and operational evaluation on schedule. The USS PITTSBURGH (SSN-720) has been loaded with vertical CLS and missiles to support initial submerged submarine testing. Naval Weapon Station, Earle, N.J., USS FULTON (AS-11) and USS McKEE (AS-41) are currently being trained to handle CLS.

The CLS capability which adds an external launch capability for twelve missiles on SSN-719 and later submarines of the SSN-688 class provides a significant tactical improvement to the submarine force without removing a single torpedo.

SURFACE SHIP LAUNCHED TOMAHAWKS:

The Surface Ship Launched TOMAHAWK program is also on schedule. The Surface Program's major accomplishment this year was the introduction of the vertical launch capability to the fleet. The first vertical launch of a TOMAHAWK from a ship at sea was in May 1985, from the USS NORTON SOUND (AVM-1) (See figure 6).

Operational evaluation for vertical launch was conducted last month. The BUNKER HILL (CG-52), the first vertical launch cruiser, will complete testing in FY 1986. This system further enhances the firepower of our existing platforms. In essence, the Navy has introduced a significant weapons system to the fleet that will revolutionize naval warfare without the added cost of building dedicated platforms for the system.

The USS NEW JERSEY (BB 62), after being brought up to the latest baseline configuration has been recertified. Two of our planned four battleships, the NEW JERSEY and the IOWA are now TOMAHAWK certified and capable of deploying with 32 TOMAHAWK cruise missiles. The third battleship, USS MISSOURI is scheduled for recommissioning within the next couple of months.

Five ships were TOMAHAWK certified during FY 1985 (three destroyers and two cruisers)--providing the Navy with eight TOMAHAWK capable surface ships to date.

GROUND LAUNCHED CRUISE MISSILES

Significant activation progress has been made in support of our NATO commitment since my last report, and this progress is continuous. As of the end of last year, 128 GLCMs have been deployed to bases in Belgium, Italy, and the UK and the deployment of the first GLCMs to Wueschheim Air Station in West Germany is taking place this month. In addition, the Dutch Parliament is expected to cast its final vote on deployment to the Netherlands later this month.

As a result a firm signal has been sent to the Soviets regarding NATO resolve on the issue of intermediate range nuclear force deployment in Europe. Every NATO nation that agreed to accept GLCM at the 1979 NATO Defense and Foreign Minister's meeting has honored that commitment. NATO's ability to deter Soviet aggression with a creditable, non-strategic nuclear force is now a reality.

The Air Force has transitioned the majority of the GLCM program office to the Aeronautical Systems Division at Wright-Patterson AFB, Ohio. An Air Force operating location detachment remains with the Joint Cruise Missiles Project to provide liaison and support on common weapon system items.

LOGISTICS:

Now that we are deploying these weapons in greater numbers, an essential element of the TOMAHAWK Program is shore station support which must meet Fleet requirements safely and adequately at minimum cost and without excessive technical sophistication. Originally we conducted on-site surveys of 23 naval shore stations to assess their potential to support the TOMAHAWK program within reasonable temporal and funding constraints.

To date we have selected nine major shore stations, six supporting Pacific Fleet Units and three supporting Atlantic Fleet Units. Support to be provided will vary depending upon the status of program development and deployment plans in the areas served by the selected station.

We have established a priority list of facility requirements through FY92 and are working closely with the Chief of Naval Operations (CNO) resource sponsors to have essential military construction projects programmed in time to coincide with TOMAHAWK deployment scenarios. For example, required training facilities for the Navy Weapons Training Group, Pacific at the Naval Air Station, North Island, California were funded and completed last year and are already in use. The military construction program for support of the sea-launched TOMAHAWK variants has been spread over the next six years. More than three-quarters of these projects have been scheduled for inclusion in the FY88 and FY89 military construction programs. Of the funds required, 59% are for magazines, 24% for waterfront facilities and dredging, 10% for industrial facilities, and 7% for security facilities.

ALL-UP-ROUND DUAL SOURCE PROGRAM

The All-Up-Round dual source program began last year with General Dynamics/Convair and McDonnell Douglas Astronautics in a competitive environment. I pointed out at that time; however, that I did not expect competition to be fine tuned until the FY87 buy. I would like to ensure the Congress that upon completing a Production Readiness Review (PRR) of the McDonnell Douglas Facilities in Titusville in late February, that I fully expect a keen competition for the FY87 buy.

The FY86 buy between General Dynamics/Convair and McDonnell Douglas was 60% for General Dynamics and 40% for McDonnell Douglas. The FY85 buy was 60% General Dynamics and 40% McDonnell Douglas. Also during FY86 we completed actions to establish our dual source contractors as our Prime

Depot Maintenance activities. Both contractors have been validated for scheduled Depot Maintenance work. I would like to reemphasize at this time that in order to realize cost savings involved in the All-Up-Round competition for FY87 a minimum procurement of 400 missiles (324 SLCM's and 76 GLCM's) is necessary to sustain dual source.

TEST AND EVALUATION

There have been key accomplishments in the TOMAHAWK test program since I addressed you last year. As I stated earlier, the conventional land attack variant with the terminal dive mode of attack has successfully completed operational evaluation and is scheduled for deployment later this month.

Also, in November of 1985 testing of the BGM-109D variant with a submunitions dispenser (a warhead made up of Combined Effects Bomblets) was successfully begun. By this time next year it is expected that developmental testing of this variant will be complete and we will be proceeding into operational evaluation during the latter part of 1987.

Last year I announced our intentions to begin overland testing of the land attack variant on the east cost from the Gulf of Mexico over portions of Florida and Alabama and terminating these flights on the Eglin Air Force Base Test Range in Florida. The first test in December 1985 was unsuccessful because of a procedural error. The second east coast test, was conducted last month and was a fully successful test. In this test we launched from a surface ship and flew a fully guided land attack mission of more than 500 miles. The east coast range is now ready to support the training requirements of the Atlantic fleet ships and submarines.

Developmental work has been completed for TASM improvements which began due to operational evaluation reported deficiencies. Also, the Operational Test Launch program of all variants has been very successful.

In the upcoming year we plan to conduct the first submarine vertical launch, another live warhead demonstration similar to the one we conducted in July 1984 on San Clemente Island and fly the first McDonnell Douglas made missile.

BUDGET AND COST

The Joint Cruise Missiles Project's FY 1987 President's Budget Estimate for Research and Development and procurement appropriations shows an overall program decrease of $575.9M or 4% from the FY 1986 President's Budget Estimate. The current total estimated cost of the program is $13,216.0M for the program years in the FY 1987 President's Budget. The distribution of this amount and a comparison to the FY 1986 President's Budget is depicted in Figure 7.

The entire fiscal year spread of the FY 1987 President's Budget Estimate is included as Figure 8.

WEAPONS PROCUREMENT, NAVY

In Weapons Procurement, Navy, (WPN), the appropriation which funds the missiles and associated support and nonrecurring items, the FY 1987 President's Budget shows a reduction of $596.8M, or 6%, over the previous year's budget. Within this overall reduction, the missile profile of 3,994 missiles has been extended one year into FY 1993 to smooth the production profile and take into consideration Navy's year-to-year weapon systems affordability issues.

As shown in Figure 9, expected savings to the missile procurement program resulting from the aggressive competitive acquisition strategy pursued by the Project Office are estimated to save another $203.2M over that which was reported last year. An overall change in the Department of Defense's estimate of inflation from FY 1987 to the end of the program allows a reduction of $400.7M over last year's estimate.

Figure 10 is a comparison of the FY 1987 column of the FY 1986 budget compared to the FY 1987 column of the FY 1987 budget.

During the past year, the Theater Mission Planning Center program was restructured to add an urgently needed capability to the system. The total increase to the WPN Theater Mission Planning line was $60.1M. A total of $23.0M was added to the program; the remaining $37.1M was taken within existing program funding (FY87-$2.6M; FY88-$31.1M, FY89-$3.4M).

A total reestimate of the missile spares and repair parts budget was conducted by Navy. The net result of this reestimate was a reduction to the projected spares requirements of $76.7M.

Other budget adjustments in a multitude of categories further adjusted the FY 1986 estimate by another $11.4M.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY

The TOMAHAWK Cruise Missiles Systems Research and Development (RDT&E,N) budget is divided between two Program Elements (P.E.'s). P.E. 64367N funds the development, test, and evaluation of all missile and weapons control system associated development. The second P.E. (64707N) funds the development of the Theater Mission Planning Center (TMPC) Systems development.

The TOMAHAWK total Research and Development budget, both missile and weapons control systems, and mission planning, increased by a net of $22.1M over the FY 1986 President's Budget. The majority of this increase is due to displaying the additional program year (FY 1991) with a total requirement in that year of $77.1M. This increase is balanced by $55.0M of other reduction in the programs.

Figures 11 and 12 display the track of both P.E.'s from the FY 1986 President's Budget request to the FY 1987 President's Budget Estimate.

The Theater Mission Planning Center budget increases are associated with the development of the upgraded mission planning system, both in the FY 1987 to FY 1990 timeframe and on into FY 1991, displayed as "Program Year Add-On" in Figure 12. These increases are balanced by affordability and inflation reductions. The development costs are almost exclusively associated with computer software generation for the upgrade program. The hardware procurement required for the upgrade program is found in the WPN budget.

The TOMAHAWK development program (P.E. 64367N) is divided between missile and weapon control system development (see Figure 12). The missile development category includes changes to improve the anti-ship navigation, acquisition, and modes of attack processes. Also included is the continued development of the new rocket motor (booster), and continued development and test of the dispenser version of the missile (BGM-109D, or TLAM/D). The remaining portion of the R&D budget is associated with the planned block upgrades of the shipboard weapons control systems to include the required interfaces with over-the-horizon and other Navy tactical data systems.

Last year, in the FY 1986 budget, we predicted a need of $87.3M in FY 1987 for the TOMAHAWK development program (P.E. 64367N). In this year's budget, the FY 1987 amount has been reduced by $18.9M to a new total of $68.4M. These reductions, are almost entirely due to Navy's and Office of Secretary of Defense (Comptroller) assessments of our expenditure rates. They are listed as "Reduction for Program Execution" in Figure 12 and have engendered a net reduction of funds available for missile improvement and weapon control system improvement developments. In the outyears, the R&D budget was reduced by $49.5M for Navy affordability issues. New inflation calculations further reduced the budget by $7.0M.

OTHER PROCUREMENT, NAVY

The TOMAHAWK Other Procurement, Navy (OPN) budgets fund the procurement of equipment installed in both surface ships and submarines which make a ship TOMAHAWK capable. These include the TOMAHAWK Weapons Control System for surface ships and equipment for the Combat Control System (CCS) MK1 system in submarines. The equipment is capable of launching the TOMAHAWK missiles either vertically or horizontally, depending upon the configurations of the surface ships and submarines.

The OPN budget is subdivided into four lines, surface ship equipment, surface ship spares, submarine equipment and submarine spares.

The OPN budget as a whole increased by $38.2M. The majority of this increase is due to the addition of the new program year in the Five Year Defense Plan (FYDP) of FY 1991 (+$42.8M), netted with other reductions in the programs.

In the Surface Ships budgets, $2.5M was reprogrammed from the spares account to the full funding account to procure an armored box launcher battle spare. Estimated contract savings reduced the total budget by $30.8M. However the addition of one suite of equipment in FY87 and a program to change the existing computers in the weapons control systems to a newer version added $41.8M to the program. A realignment of the production support services portion of the budget added $5.5M and a reestimate of the spares and repair parts requirements added $2.3M. Applying the new Department of Defense inflation rates to the programs reduced the funding requirements by $10.6M. These changes are summarized in Figure 13-1 and Figure 13-2.

In the Submarine Support Equipment budget, the net reduction was $12.8M. In reestimating the program for this budget cycle we were able to reduce the budget by $5.8M in the line that supports the modifications to the Combat Control System MK1 system and an additional $15.0M in the modifications or ordnance alteration (ORDALT) line. A reestimate of the spares and repair parts requirements for submarine equipment required an additional $2.4M. Again, applying the Department of Defense inflation rates to FY 1987 and beyond reduced the program by $0.9M. The changes to the submarine support equipment budget are summarized in Figure 14.

CONCLUSION

In concluding my formal statement to this committee today, I would like to reiterate that with the deployment of this significant weapon system in our operating units at our main operating bases in Western Europe we have counter the Soviet Intermediate Range ballistic missile threat against NATO. With our deployment at sea we have begun to move the U.S. Navy from a fleet that was just a few years ago centered on 14 strike platforms to a fleet of more than 190 strike platforms. With this new strike capability we will be able to hold at risk a large number of targets which previously were not covered by naval forces or any other theater forces. As a result of this capability, distributed beyond planned carrier force levels, Soviet planning has been complicated by requiring them to consider almost every battle group ship a potential threat.

With TOMAHAWK we both supplement and complement carrier based aircraft in situations where aircraft attrition would be unacceptably high. With TOMAHAWK U.S. will and determination can be demonstrated very effectively without jeopardizing aircrews.

With TOMAHAWK our ships and submarines can now stand-off at longer ranges from the threat of Soviet naval aviation. TOMAHAWK, has forced the Soviets to build a defensive system at the expense of furthering their offensive capability.

In essence, with TOMAHAWK we have added a new dimension to our capability that will revolutionize Naval warfare in a most cost effective way.

Mr. Chairman, members of this committee, it is in my personal opinion that nothing is more important than getting TOMAHAWK to sea in significant numbers in an effort to maintain our deterrence to war or force its earliest termination on terms favorable to the United States if deterrence fails.

Thank you.

TPF FINAL ASSEMBLY AREA

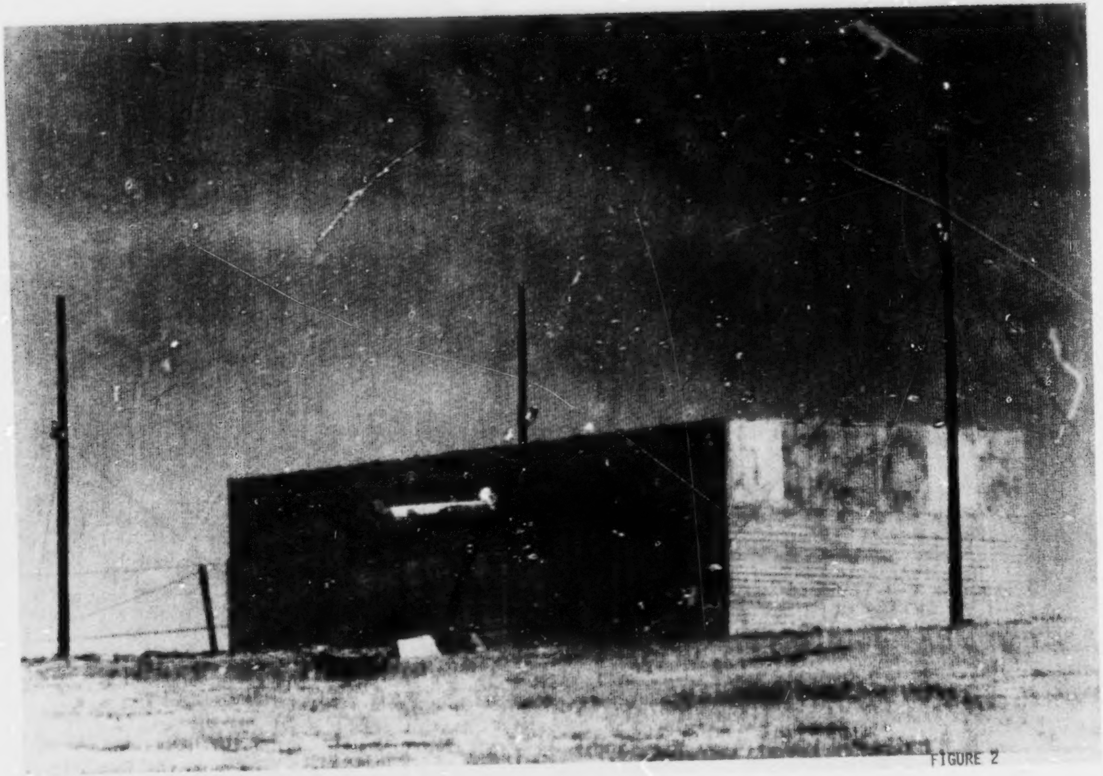
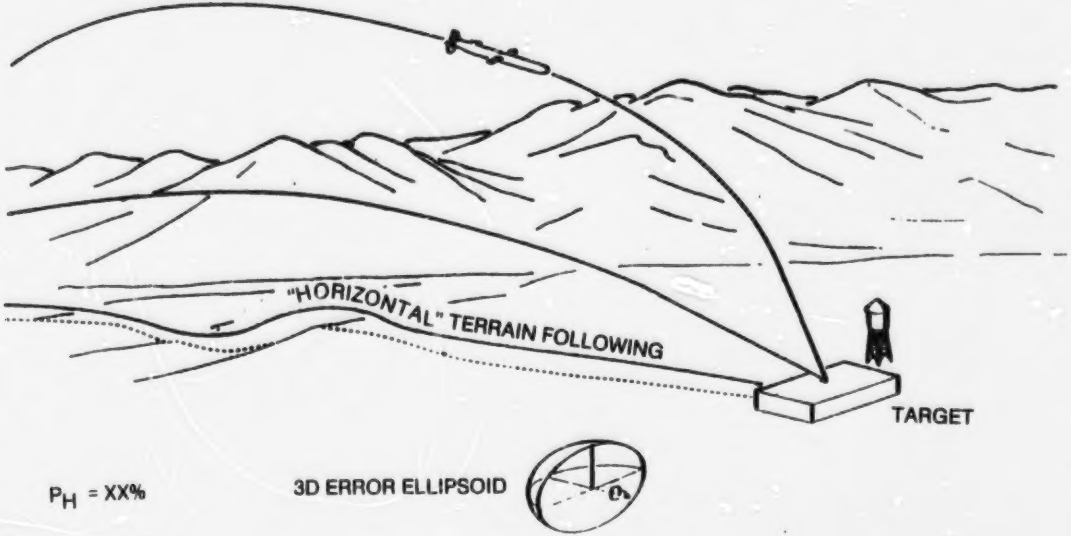


FIGURE 2

TERMINAL ATTACK ENHANCEMENT


"HORIZONTAL" TERRAIN FOLLOWING
TARGET
3D ERROR ELLIPSOID

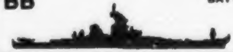
P_H = XX%

FIGURE 3

TOTAL PLANNED TOMAHAWK PLATFORMS

USN SURFACE SHIPS

BB BATTLESHIP



4

CGN NUCLEAR GUIDED MISSILE CRUISER

5

CG GUIDED MISSILE CRUISER

22

DD DESTROYER

31

DDG GUIDED MISSILE DESTROYER

29

TOTAL SURFACE SHIP 91

031 86 020 0000

USN SUBMARINES

SSN-688 LOS ANGELES CLASS

68

SSN-637 STURGEON CLASS

39

TOTAL SUBMARINE 107

USAF GLCM

MAIN OPERATING BASES 6

AS OF: 10 MARCH 1986

FIGURE 4

164

ANTI-SHIP MISSION

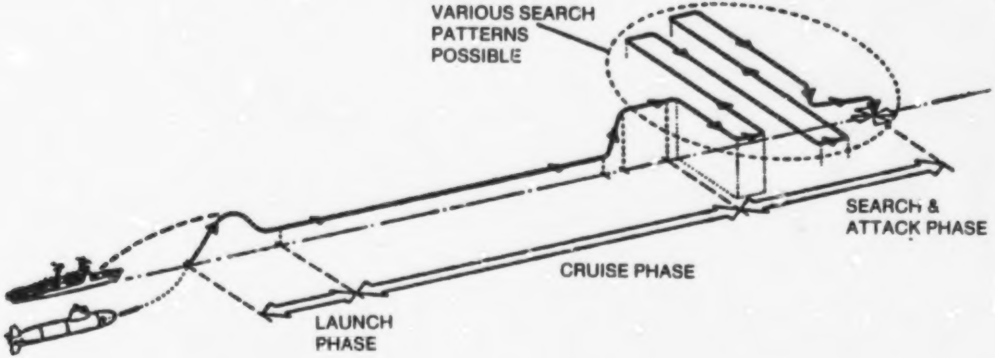

VARIOUS SEARCH PATTERNS POSSIBLE
SEARCH & ATTACK PHASE
CRUISE PHASE
LAUNCH PHASE

FIGURE 5

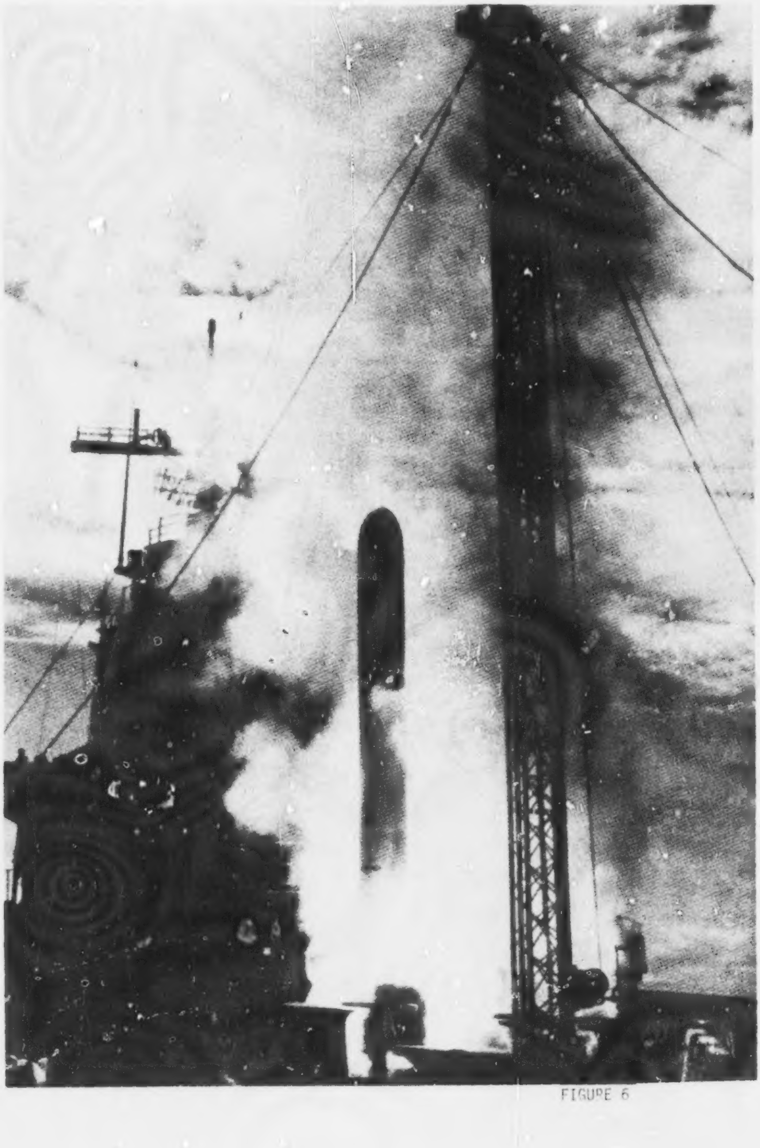


FIGURE 6

TOMAHAWK
TOTAL PROGRAM COST TRACK

	FY86 PRESIDENT's BUDGET	CHANGE	FY87 PRESIDENT's BUDGET
R&D	$ 1,856.2	+$22.1	$ 1,878.3
PROCUREMENT	11,935.2	- 598.0	11,337.2
(WPN)	(11,033.7)	(-636.2)	(10,397.5)
(OPN)	(901.5)	(+ 38.2)	(939.7)
MILCON	0.5	0	0.5
TOTAL	$13,791.9	-$575.9	$13,216.0
NUMBER OF MISSILES	4,068 (3,994 PRODUCTION 74 RDT&E)		4,068
PERCENTAGE CHANGE			-4%

[illegible]

FIGURE 7

FY1987 CONGRESSIONAL BUDGET ESTIMATE - TOMAHAWK CRUISE MISSILES WEAPON SYSTEMS

	86	87	88
R&D PE64367N			
TOMAHAWK WEAP SYS K0545	61,987	68,368	70,953
TMPS PE63717N K1784	14,967		
TMPS PE64707N K1784		17,743	25,843
TOTAL R&D	76,954	86,111	96,796
WPN QUANTITY	249	324	410
(SHIP QTY/SUB QTY)	(140/109)	(224/100)	(303/107)
FULL FUNDING	670,204	721,736	817,914
ADV PROC	54,600	68,800	90,185
INITAL SPARES	42,997	45,117	50,332
WPN TOTAL WPN	767,801	835,653	958,431
TOMAHAWK MOD's	2,377	7,235	8,097
OPN SURFACE SUPT EQUIP			
ABL CWCS QTY	-	-	-
VLS CWCS QTY	3	4	4
CWCS TRAINER QTY	2	-	-
TOTAL SHIP QTY	5	4	4
CWCS PROGRAM	83,801	109,593	87,102
CWCS INIT SPARES	4,152	3,637	2,610
TOTAL SURFACE OPN	87,953	113,230	89,712
SUBMARINE SUPPORT EQIP			
SSN 688 QTY	1		
SSN 637 QTY	10	5	5
TOTAL SUB QTY	11	5	5
TOMAHAWK	18,821	11,916	9,007
SUB PROGRAM SPARES	1,334	1,213	1,227
TOTAL SUBMARINE OPN	20,155	13,129	10,234
TOTAL OPN	108,108	126,359	99,946
ENGINEERING SUPPORT	66,879	97,973	109,700
HEADQUARTERS SALARY & SUPPORT	11,191	11,444	12,263
TOTAL O&M,N	78,070	109,417	121,963
TOTAL JCMP FUNDS	1,030,933	1,157,540	1,277,136

041A 86 021 D002

FIGURE 8

WPN TOMAHAWK
PROGRAM SUMMARY
($M)

	FY80-FY92
● FY86 CONGRESSIONAL BUDGET - $636.2 (-6%)	$11,033.7
— ADJ PRODUCTION PROFILE	+32.8
— CONTRACT SAVINGS	-203.2
— INFLATION	-400.7
— TMPS UPGRADE	23.0
— BUDGET ADJUSTMENT	-11.4
— SPARES RESTIMATE	-76.7
● FY87 CONGRESSIONAL BUDGET	$10,397.5

0368 86 021 D002

FIGURE 9

TOMAHAWK
BUDGETARY BACKGROUND
($M)

	FY87 COLUMN FY86 CONGRESSIONAL BUDGET		CHANGE	FY87 COLUMN FY87 CONGRESSIONAL BUDGET	
QTY	(330)		(-6)	(324)	
FLYAWAY	755.7M	(82%)	-36.5	719.2M	(88%)
FLEET SUPPORT	97.6M	(10%)	-40.5	57.1M	(7%)
SPARES	70.2M	(8%)	-25.1	45.1M	(5%)
TOTAL	923.5M		-102.1	821.4M	

00SC 86 021 D002

ALL AMOUNTS INCLUSIVE OF PRIOR YEAR ADVANCE PROCURMENT

FIGURE 10

R&D
THEATER MISSION PLANNING CENTER (64707N)
PROGRAM SUMMARY
($M)

	FY83-91
● FY86 CONGRESSIONAL BUDGET $+18.6M (+18.3%)	$101.9M
— PROGRAM YEAR ADD ON	+11.2M
— UPGRADE PROGRAM	+13.1M
— NAVY AFFORDIBILITY CUT	-4.0M
— INFLATION REDUCTION	-1.7M
● FY87 CONGRESSIONAL BUDGET	$120.5M

[illegible] 86 021 [illegible]

FIGURE 11

R&D
TOMAHAWK (64367)
PROGRAM SUMMARY
($M)

	FY83-91
● FY86 CONGRESSIONAL BUDGET $+3.6M (+0.3%)	$1754.2M
— PROGRAM YEAR ADD ON	+65.9M
— REDUCTION FOR PROGRAM EXECUTION	-13.2M
— NAVY AFFORDIBILITY ISSUES	-49.5M
— INFLATION REDUCTION	-7.0M
● 87 CONGRESSIONAL BUDGET	$1757.8M

0388 86 1121 D002

FIGURE 12

BLANK PAGE

BLANK PAGE

BLANK PAGE

OPN
SURFACE TOMAHAWK
PROGRAM SUMMARY
($M)
SURFACE SHIP EQUIPMENT

● FY86 CONGRESSIONAL BUDGET (+$50.2: +7%)	$738.3M
— ABL BATTLE SPARE (REPROG)	+2.5
— CONTRACT SAVINGS	-30.8
— 1 SUITE	+10.6
— ALTS/MOD (1666D)	+31.2
— PSS/REALIGNMENT	+5.5
— INFLATION REDUCTION	-10.1
— PROGRAM YEAR ADD-ON	+41.3
● FY87 CONGRESSIONAL BUDGET	$788.5M

SURFACE SPARES

● FY86 CONGRESSIONAL BUDGET (+$.8: +.3%)	$32.7M
— ABL BATTLE SPARE (REPROG)	-2.5
— SPARES REESTIMATE	+2.3
— INFLATION REDUCTION	-0.5
— PROGRAM YEAR ADD-ON	+1.5
● FY87 CONGRESSIONAL BUDGET	33.5M

[illegible]

FIGURE 13

OPN
SUBMARINE TOMAHAWK
PROGRAM SUMMARY
($M)
SUBMARINE EQUIPMENT

	FY81-91
● FY86 CONGRESSIONAL BUDGET (-$15.0: -12%)	$125.1M
— CCS MK I	-5.8
— PSS REESTIMATE	+6.5
— ORDALTS	-15.0
— INFLATION REDUCTION	-0.7
● FY87 CONGRESSIONAL BUDGET	$110.1M

SUBMARINE SPARES

● FY86 CONGRESSIONAL BUDGET (+$2.2:+41%)	$5.4M
— TOMAHAWK SPARES REALIGNMENT	+2.4
— INFLATION REDUCTION	-0.2
● FY87 CONGRESSIONAL BUDGET	$7.6M

[illegible]

FIGURE 14

Mr. **Chappell**. Admiral, this committee is cognizant of the tremendous job you have done with the TOMAHAWK program and we commend you for the splendid work you have done.

Admiral **Hostettler**. Thank you, sir.

CONGRESSIONAL DIRECTION

SQR-17

Mr. **Chappell**. Let me ask some questions and I want to get back to you.

Last year, the Committee directed the Navy to procure three service test models of a modification of the SQR-17 to provide onboard training capability for the Naval Reserve.

Is the congressional direction being followed?

Admiral **Smith**. Admiral Ailes will cover that subject, Mr. Chairman.

Admiral **Ailes**. We are looking at that. We believe we will be able to comply, sir. The question we are looking at is whether we have to compete the SQR-17. We understand your intent is not to do so and I believe we will be able to comply with that.

Mr. **Chappell**. The fiscal year 1985 contract for the SQR-17 still has not been awarded, has it? Our information is that the award would be made in January, then February, and most recently in March. It is now well into March and we understand we still don't have a contract and we would like to know why that is so.

Admiral **Ailes**. I am told the date is April and I will have to provide the details.

Mr. **Chappell**. Fine.

[The information follows:]

The Navy has always projected an award date of March 1986. The Defense Contract Audit Agency completed their review of the Diagnostic/Retrieval Systems, Inc. (DRS) proposal in mid-February, 1986. Contract negotiations are underway at this time with DRS. The Navy expects to award a combined FY-85/FY-86 contract for 37 AN/SQR-17A(V) processors by 28 March.

Mr. **Chappell**. How many months delay has this been?

Admiral **Ailes**. It sounds like quite a few. I am not familiar with the details on it.

Admiral **Smith**. I think the current contract date is 31 March, Mr. Chairman.

Mr. **Chappell**. You are going to contract on March 31?

Admiral **Smith**. That is the commitment we have from ASN Shipbuilding and Logistics.

Mr. **Chappell**. You think that is pretty firm?

Admiral **Smith**. I do.

Mr. **Chappell**. So you intend to have it done by March 31?

Admiral **Smith**. We intend to see this done.

SQQ-89 ACOUSTIC VIDEO PROCESSOR

Mr. **Chappell**. The Congress also directed the Navy to compete the SQQ-89 acoustic video processor. What is the status of this competition?

Admiral **Ailes**. My understanding is that is being done, sir, in compliance with your guidance.

Mr. CHAPPELL. Have you had slippages in this program?

Admiral AILES. I don't have the details. I will provide those, but it is our intent to just do that. If there is slippage, it is administrative and we will provide the details.

[The information follows:]

The initial draft of the specification was released to industry for comment on 24 December 1985, with a final draft planned for April 1986. Comments received from industry on the initial draft are expected to significantly influence the final draft. A briefing to industry was held 30 January, and attended by 37 companies. Release of the Request for Proposals is expected for May/June 1986.

Mr. CHAPPELL. Is anyone else familiar with the program?

Admiral SMITH. I am.

I think Admiral Ailes states correctly that the Navy intends to comply with the language. I think that they intend to do that reasonably soon, but I do not have the contract time for you.

Mr. CHAPPELL. Once you issue the RFP, how long does it normally take before industry responds and you evaluate the information?

Admiral SMITH. I think it is 30 to 90 days, depending on the complexity of the RFP.

In this case, it should not be very complex.

Mr. CHAPPELL. But has the RFP been issued?

Admiral SMITH. I don't know that, whether it has been issued or not.

We will provide that.

[The information follows:]

Once the Navy issues a Request For Procurement (RFP), it normally requires 60 to 90 days for industry to respond and an additional 30 to 60 days for Navy to evaluate these responses. The SQQ-89 Request For Procurement has not yet been issued. The Navy anticipates release of a competitive RFP in June 1986 for an early October contract award.

Mr. CHAPPELL. Gentlemen, I don't want to be argumentative here, but were you told that we were going to specifically get into these projects?

Admiral AILES. I was not in advance of the meeting.

Admiral SMITH. I was told this subject would be brought up today.

Mr. CHAPPELL. Is there any particular reason why we don't have somebody here that has the detailed information?

Admiral SMITH. No, Sir; there isn't.

Mr. CHAPPELL. So we don't know whether the RFP has been issued or not and all we have in testimony is that you intend to comply. That is all the information we have on this program; is that right?

Admiral SMITH. I may have it in here and I didn't recognize it as such. If it is there, we will give it to you. I do not have the scheduled time for the signing of the RFP.

Mr. CHAPPELL. I wonder if you could have somebody get on the telephone and find out that information for us while we go on to something else.

Last year, the Navy held a competition for the SQQ-89 trainer. Do you intend to develop a second source for the trainer, and if so, when would you compete the follow-on procurements?

Admiral **Smith**. For the SQQ-89 trainer, I don't believe we intend to go with a second source.

Mr. **Chappell**. Why would that not be so, not enough of them or what?

Admiral **Smith**. It is my understanding that there aren't enough trainers to do a dual source procurement.

Mr. **Chappell**. What is the status of that program?

Admiral **Smith**. I don't have the status of that competition.

Mr. **Chappell**. Would you get somebody on the telephone and see if they have that information before we finish the hearing?

Admiral **Smith**. Yes, sir.

Mr. **Chappell**. I think you are saying that you would not intend to go to a second source, a competitive dual source, because of the numbers, right?

Admiral **Smith**. The numbers are not sufficient to do that, sir.

MK-92 CORT

Mr. **Chappell**. The conferees also directed that the Navy proceed with the MK-92 CORT upgrade production concurrent with the FFG-61 production. What is the status of this procurement?

Admiral **Ailes**. We are still looking at that, Mr. Chairman. As you know, we have completed the land-site testing of that item and are now moving it to the ship for the at-sea test.

I will have to provide what the decision was because that is still under review because of the status of that particular program, so I do not have an official answer for you at this time, sir.

Mr. **Chappell**. So you can't tell us whether you plan to go to contract on it?

Admiral **Ailes**. No, sir, I cannot at this time.

[The information follows:]

FFG-61 is being constructed with the MK 92 Coherent Receiver-Transmitter (CORT) upgrade in accordance with Congressional direction. The contract for procurement of CORT unique items for FFG-61's MK 92 Fire Control System is expected to be signed on 21 March 1986. This contract will include an option for procurement of six CORT backfit kits at a not to exceed price of $54 million and an option for associated spares provided by the contractor at a not to exceed price of approximately $24.4 million.

Mr. **Chappell**. Is there enough information available that you could tell us whether you are going to go to contract?

Admiral **Ailes**. We are still reviewing the information available, the results of the completed land-based testing program and the ability to bring that system in at sea. There is concern in our mind that the system is not as advanced as was thought by the committee and that significant discrepancies still need to be corrected before we start procuring that system.

Mr. **Chappell**. What are the deficiencies in it at this time?

Admiral **Ailes**. I don't have a list of the discrepancies. They have to do with meeting the performance standards of the radar in the environment that was tested.

Mr. **Chappell**. Why don't you get somebody on the telephone and see if they can get us that information.

Admiral **Smith**. I understand that we are currently negotiating with Sperry at this time to start building the SCN funding for the production unit for the FFG-61, which would start construction in this fiscal year. I do not know the status of those negotiations. We have deferred use of 1986 OPN funds for the backfits until we complete the at-sea testing.

Mr. CHAPPELL. Get us as complete information as you can before we end this hearing. The chairman is particularly interested in this program and how it is moving and what its status is and what you intend to do and where the deficiencies are, okay.

[The information follows:]

FFG-61 is being constructed with the MK 92 Coherent Receiver-Transmitter (CORT) upgrade in accordance with Congressional direction. The contract for procurement of CORT unquie items for FFG-61's MK 92 Fire Control System is expected to be signed on 21 March 1986. Assembly of FFG-61's MK 92 CORT system must begin in FY-86 in order to meet the ship's construction schedule. This contract will include an option for procurement of six CORT backfit kits at a not to exceed price of $54 million and an option for associated spares provided by the contractor at a not to exceed price of approximately $24.4 million.

The MK 92 CORT development program———.

TOMAHAWK—TLAM-D

Mr. CHAPPELL. Admiral Hostettler, let me come back to you.

On the TOMAHAWK, the Navy is requesting $721.7 million to procure 324 TOMAHAWK cruise missiles.

Of that number, 20 are identified as the new "D" version, which is armed with a submunitions dispenser. The Navy made a similar proposal last year, which was deferred by the Congress until development and operational testing of the TLAM-D had been completed.

The first flight test of TLAM-D took place in the fall of 1985.

How many submunitions were dispensed?

Admiral HOSTETTLER. Let me answer that for the record to be exact.

We hit———.

[CLERK'S NOTE.—Classified insert removed.]

Mr. CHAPPELL. Are there any problems with the TLAM-D payload cover?

Admiral HOSTETTLER. No, sir. I had three problem areas that I defined subsequent to that test and none of them had that problem. We found ——— downrange and corrected that.

One of the packs that kicks out rounds broke up prematurely ———. We found that problem and solved it. We had a problem ———. These are off the shelf. We found that problem and solved that, so right now I don't have anything that we haven't solved.

Mr. CHAPPELL. You have no major problems with it?

Admiral HOSTETTLER. Not at the moment.

Mr. CHAPPELL. Would you tell us just briefly what the operational test program is and give us some idea of the milestone schedule.

Admiral HOSTETTLER. Yes, sir.

To begin with, we should be going into operational test and evaluation midsummer next year, 1987, and we plan for an IOC early fall 1987.

Part of that time we have had one initial contractor in a development test. We have a series of tests between not and the start of OPEVAL which I believe is nine shots plus three OPEVALS for a total of twelve to secure that program.

Mr. CHAPPELL. The Navy documentation for fiscal year 1987 shows $4.5 million of fiscal year 1986 funds being spent on conventional dispensers. Why is that?

Admiral HOSTETTLER. I am sorry. Are we talking about 1986 or 1987?

Mr. CHAPPELL. 1987.

Mr. SERAPHIN. The 1986 column of the 1987 budget shows $4.5 million being spent on TLAM-D.

Admiral HOSTETTLER. That is the technical transfer to transition from R&D into production initially, not all-up-round. It was to produce the material and the integration of that material into what we call payload kits, that is not the round, it is just that section that the dispensers go into that marry ultimately in the round.

That was done to get our tooling started and ultimately to get into dual source production at both Titusville and San Diego. That was five kits to assist us in that technical transfer.

TOMAHAWK PROCUREMENT COSTS

Mr. CHAPPELL. The budget documentation submitted by the Navy shows apparent discrepancies between the reported procurement costs for TOMAHAWK. For example, the P-22a exhibit for fiscal year 1986 showed the combined unit cost for a fiscal year 1986 TLAM-D all-up-round and engine as $1,796,000. The P-22a exhibit for fiscal year 1987 shows the same item as costing $2,092,000, or 16.5 percent higher.

Please explain this difference.

Admiral HOSTETTLER. I will have to answer that for the record. My sheets and those numbers don't quite match. This is for all-up-rounds and the engine combined? Could I take that for the record?

Mr. CHAPPELL. Yes.

[The information follows:]

The FY 1986 P-22A, or Procurement History and Planning exhibit, deliniated the major hardware contract items. Not shown on the P-22A for FY 1986, but displayed on the P-12, or missile Cost Analysis exhibit, are those lesser cost hardware items which are supplied as Government Furnished Equipment. The BGM-109B, or TASM, entry on the FY 1986 P-22A showed the expected contract price of the TASM All-Up-Round (airframe and guidance section) from the dual source contractors, (1,551M) and the expected engine contract price from the competing engine contractors ($0.245M). Not shown on the FY 1986 P-22A because of spacing problems, but shown on the P-12, are the booster ($0.130M), payload ($0.022M), shipping container ($0.017M), missile radar altimeter (0.22M), and either a cannister for surface ship launch ($0.061M), or a vertical ($0.679) or horizontal ($0.110M) submaine launch capsule. The average cost of a TASM in FY 1986 was prediced to be $2.227M.

Because of the potential confusion over the issue, especially on the TOMAHAWK program with its multiple variants, launch configurations, and items of Government Furnished Equipment, Navy Comptroller directed the project to display the entire expected cost of the delivered missile, by variant, by fiscal year in the FY 1987 P-22A, updated for any actual information which may be available. The FY 1986 TASM price is now shown in the FY 1987 P-22A as $2.092M, or 6.1% lower than predicted and reflected in the FY 1986 P-12. The TASM in FY 1987 is budgeted at $2.068M, or a further expected reduction of 1.1%.

Mr. CHAPPELL. If it is so, why is the TLAM-D budget in 1987 at nearly double the unit cost projected in 1986?

Admiral HOSTETTLER. We will provide that for the record.

Mr. CHAPPELL. We will come back to that.

Admiral **Hostettler**. I don't believe that is the case.

Mr. **Chappell**. That is what I am trying to get at. See if you can find out. We may have the figure wrong here.

[The information follows:]

The entire cost of the missile is derived from the P-12 exhibit, not the P-22A exhibit. In the FY 1986 budget submission, the FY 1987 TOMAHAWK Land Attack (Dispenser), or TLAM/D, was budgeted at $2.595M. The FY 1987 President's Budget shows the missile budgeted at $2.469M, for an expected reduction of 4.9% over that predicted last year.

TOMAHAWK COMPETITION

Mr. **Chappell**. The all-up-round program for producing Tomahawks has been in place for over two years. Under this program, two competing firms are building missiles which are supposed to be functionally identical.

Has it in fact resulted in lower costs?

Admiral **Hostettler**. Yes sir, no question about it. I am not sure which unit costs we are referencing. We will take this for the record.

The unit cost, for instance, that we talked to in the '86 budget, for '86, was about $2.4 million rounded off, and the unit cost today, FY 87, is $2.2 million. That is unit cost flyaway.

So it has gone in the right direction. It is the same with procurement costs, they are likewise coming down.

Mr. **Chappell**. We will give you a copy of the question and let you see if you can get it cleared for the record.

[The information follows:]

The FY 1986 P-22A, or Procurement History and Planning exhibit, deliniated the major hardware contract items. Not shown on the P-22A for FY 1986, but displayed on the P-12, or missile Cost Analysis exhibit, are those lesser cost hardware items which are supplied as Government Furnished Equipment. The BGM-109B, or TASM, entry on the FY 1986 P-22A showed the expected contract price of the TASM All-Up-Round (airframe and guidance section) from the dual source contractors, (1,551M) and the expected engine contract price from the competing engine contractors ($0.245M). Not shown on the FY 1986 P-22A because of spacing problems, but shown on the P-12, are the booster ($0.130M), payload ($0.022M), shipping container ($0.017M), missile radar altimeter (0.22M), and either a cannister for surface ship launch ($0.061M), or a vertical ($0.679) or horizontal ($0.110M) submarine launch capsule. The average cost of a TASM in FY 1986 was predicted to be $2.227M.

Because of the potential confusion over the issue, especially on the TOMAHAWK program with its multiple variants, launch configurations, and items of Government Furnished Equipment, Navy Comptroller directed the project to display the entire expected cost of the delivered missile, by variant, by fiscal year in the FY 1987 P-22A, updated for any actual information which may be available. The FY 1986 TASM price is now shown in the FY 1987 P-22A as $2,092M, or 6.1% lower than predicted and reflected in the FY 1986 P-12. The TASM in FY 1987 is budgeted at $2.068M, or a further expected reduction of 1.1%.

Mr. **Chappell**. Have you found any discrepancies or difference been identified in missiles being built by the two firms?

Admiral **Hostettler**. At the present time they are beginning to achieve a rate of about ten per month. You can't tell them apart. I could not tell them apart. Every part is interchangeable and every assembly is interchangeable. I think that has paid off and our inspections down there continue to show that you will not see one from the other.

Mr. **Chappell**. Mr. McDade.

MK 50 TORPEDO

Mr. **McDade.** Thank you, Mr. Chairman.

Let's talk a bit about the Mark 50 torpedo. That is the Navy's lightweight torpedo which is scheduled to gradually replace the Mark-46. Your budget request represents the first limited production procurement for the Mark-50 which is concurrent with full scale development.

Admiral **Ailes.** That is correct.

Mr. **McDade.** Is that right?

Admiral **Ailes.** There is some concurrency there, yes sir.

Mr. **McDade.** How much concurrency? Can you describe it for me?

Admiral **Ailes.** We are pressing to get the torpedo into production. I don't have specific details to say that the production—we do not think there is a risk involved there.

Mr. **McDade.** Let me ask this. How much more money is required to complete the Mark-50 R&D effort?

Admiral **Ailes.** I will have to take that question for the record. I don't have the specific figures in front of me.

[Clerk's note.—The Department was unable to provide a response in time to be printed in this hearing volume.]

Mr. **McDade.** We have been advised by Navy officials that there is nearly an $18 million funding shortfall in the FY 86 program. Are you aware of that?

Admiral **Ailes.** We are putting a small amount of money—not to that extent—back into the '86 program, which is about——

Mr. **McDade.** Not $18 million?

Admiral **Ailes.** No, sir.

Mr. **McDade.** How much?

Admiral **Ailes.** About $4.2 or $4.6 million, I have forgotten the specific value which will fully fund the '86 requirement. I participated in a review of that program yesterday. There are no additional funds required beyond that which are shown.

Mr. **McDade.** Were you using the $4.6 million from—what is the source of it?

Admiral **Ailes.** I will have to provide that. I don't think we have made up our minds on that, to be honest with you.

[The information follows:]

The Navy is reprogramming $3.9 million above the appropriated R&D amount to ensure that this program is adequately funded.

Mr. **McDade.** Does this do anything to put the schedule in jeopardy?

Admiral **Ailes.** There is some slippage of the Milestone III decision, probably by three months, or perhaps a little bit longer, but we do not think more than that. We think our '86 funding that we are submitting will accomplish the program, as we understand it. There may be a requirement to add R&D to the program in FY 88.

Mr. **McDade.** Is the design and development of both hardware and software for the ALWT mature enough to warrant initial production in FY 87?

Admiral **Ailes.** We believe it is, sir. We have no technical problems in that system at this time. The problems that we have had in that system have been purely the removal of funding from the program at the end of the year budget cuts, different things of that sort, which have caused the problem.

The program technically is on schedule, remains on schedule and has a very aggressive management of its problems, its reliability and so forth. All of those indicators are very promising, sir.

Mr. McDade. We are glad to hear that. How about the results of water tests?

Admiral Ailes. There have only been a limited number. Those tests have been satisfactory. There have been a number of simulations. As you know, the torpoedo primarily is a software oriented torpedo. We are just now working the software for the torpedo. We expect to use a considerably greater amount of simulation than we have used before to perfect that software, sir, and that is ongoing. I have every reason to be confident and there have been no technical problems either with the hardware or software that have come forward at this time.

MK50 VS MK46

Mr. McDade. Well, one of the things that confuses us is that the budget document calls for procurement of both the Mark-46 and its replacement, the Mark-50.

Admiral Ailes. That is correct.

Mr. McDade. Why purchase them both at this time, particularly when your budget statement documents state the Mark-50 "is designed to meet present and forecast threats through the year 2000"?

Admiral Ailes. We still have a need to maintain an adequate number of torpedoes in the fleet. Our torpedo inventory is such that we still, because of the introduction of ships into the fleet, need torpedos to fill our magazines. We aren't really buying more than those numbers to fill the magazines of ships that are going to sea. So we feel it is necessary to finish out with the MK-46 buy. That buy also provides, as you know, aircraft and helicopter ASW torpedoes and we still are below, as shown on the slide earlier, the numbers that we require both from our filling of our forces and from our warfighting assessments, extra torpedoes to rearm those ships.

Mr. McDade. How many more years are you going to be buying the Mark-46?

Admiral Ailes. I am told FY 88 is the final year.

Mr. McDade. You are looking at '87 and '88?

Admiral Ailes. That is correct, sir.

Mr. McDade. Well, that gets to be, it seems to us, a bit of a judgment call. If the Mark-50 is not in any difficulty, if the concurrency is not a risky situation, and you are going to meet all your schedules, software, et cetera, why wouldn't it be smarter to stop buying 46s and buy more 50s?

Admiral Ailes. Because of the shortages that we currently have in our sustainability base. That means we basically would have higher risks for warfighting in the period of time while we stop the 46 and as the 50 inventory starts to build up. We do not start the 50 off at high production rate. It is a relatively low rate to develop our lines.

Mr. McDade. Well, nevertheless, if you bought more 50s you would lower the unit cost and get more torpedoes that you are saying you are going to live with to the year 2000. What is the backlog in the inventory of Mark 46s?

Admiral Ailes. ———.

Our planned programming inventory is according to these numbers, substantially higher. ———.

Mr. McDade. How many torpedoes are funded but not yet delivered?

Admiral Ailes. I will have to take a guess. I don't have those figures right now. Roughly there is a two year delivery, so with the '86 buy of 500 and the numbers in '85 and '84 were slightly higher than that——

Mr. McDade. You can amplify that for the record.

Admiral Ailes. All right, sir. It looks like about 3,000. I would have to take that for the record.

[The information follows:

A total of 3377 torpedoes are funded but not yet delivered: 2877 from the FY-83-84 multiyear contract and 500 from FY-86.

Mr. McDade. Is that ——— the total we are talking about?

Admiral Ailes. Our programming objective ———, sir.

Mr. McDade. When did you make the ——— requirement? How long has that been a requirement? Isn't that a change? Isn't that a very recent change?

Admiral Ailes. I would have to take that for the record.

Mr. McDade. In the last couple of years?

Admiral Ailes. I do not know its age.

Mr. McDade.

Okay, submit it for the record.

Admiral Ailes. Certainly.

Mr. McDade. Provide also for the record the number of Mark-50s that could be purchased if funding in the amount of $290 million is provided.

Admiral Ailes. I certainly will.

[The information follows:]

The inventory objective for lightweight torpedoes was established ——— about 1980. This number was established by the Navy's Non-Nuclear Ordnance Panel.

Due to the physical limitations of the production line, it is estimated that ——— torpedoes could be produced at a cost of approximately $150M. The Navy could not effectively spend $290M on production of the MK 50 torpedo.

Mr. Chappell. Will you yield for a moment? I didn't hear the full answer on why it wouldn't be more practical to transfer the 46 funds to the 50 line to purchase only 50s. Is there any real problem on that?

Admiral Ailes. It would delay the buildup of our inventory. ——— as the sustainability charts showed. We are able to buy the 46 at a fairly aggressive buy and build up our inventory. In the initial years of production of 50s, as you would certainly agree, it is not prudent to start out at the high production rate. We will start them out at a very modest production rate, as we develop that production line and prove the weapons.

Mr. McDade. It is our understanding that the Navy intends to compete or develop a second source for this program. Is this accurate?

Admiral Ailes. That is correct.

Mr. McDade. How many contractors have expressed a serious interest in bidding?

Admiral Ailes. Bear with me, I might have that data.

I am told there are three contractors.

Mr. McDade. Three potential bidders?

Admiral Ailes. That is correct.

Mr. McDade. How do you intend to proceed with the second sourcing?

Admiral Ailes. I think we showed it up there. Let me review that for you.

I will have to provide it for the record.

Mr. McDade. Can you tell me what would be the total cost to establish a second source, and how does that compare to the Mark-48 ADCAP second sourcing effort?

Admiral Ailes. I will have to provide that for the record.

[The information follows:]

The second source will be selected competitively by the end of CY-86. A technology transfer program will be conducted during FY-87 and FY-88, with Honeywell as leader, providing a technical data package to the follower to build limited amounts of MK 50 hardware starting at the component level and building up to 10 qualification torpedoes. After qualification, the follower will begin an initial production run of 84 torpedoes. The qualification torpedoes must demonstrate interchangeability and interoperability with Honeywell torpedoes. The delivery of the follower's 84 torpedoes will coincide with his production line readiness to compete for a split of the first full rate production lot in FY-90.

The total estimated cost to establish a second source contractor is approximately $114.5M for 10 qualification torpedoes, production engineering and vendor qualification. Comparable costs for 12 qualification MK 48 ADCAP torpedoes are $116.5M.

Mr. McDade. Do you know what your inventory objective is?

Admiral Ailes. For the Mark-50, sir?

Mr. McDade. For the 50.

Mr. Chappell. Let me interrupt a minute. You know, my information is that you gentlemen had your staffs briefed on what was going to be covered here today and a briefing on the questions. Where you aware of that? We are not trying to fuss at anybody, but we are certainly moving awfully slowly here today. Were you aware that Mr. Magliocchetti had your people over and offered to brief them and went through all these things so you could have the answers available to us?

Admiral Ailes. The information did not get to me, which was probably my fault. I apologize.

Mr. Chappell. Well, why don't you get somebody on the telephone? If we come to questions you can't answer get somebody to take them down on the telephone. Let's get some answers in the record. I would like to hear some answers. It still doesn't make sense to me. You have got an inventory of ——— Mark-46 in place now, right?

Now, I don't see why it doesn't make more sense to assure you can test out the line on the 50s since it is a much better torpedo that we ought to get moving on this program and get those into the inventory.

I think we are just getting some poor answers here. We realize this is your first time, we are not trying to fuss at anybody, we are disappointed that somehow or other you didn't get the briefing that Mr. Magliocchetti gave somebody on your staff, to be prepared specifically, to go over these questions so that everybody would be prepared.

I am not trying to lay blame, I am pointing out a problem we would like to move rapidly, get the answers in the record, and hear them so we can discuss it. That is the purpose of doing it rather than going to the record with them.

Why don't you let your backup guy run the questions that you don't have now, that you were going to put in the record? See if you can get the answers before we adjourn?

Admiral AILES. Certainly.

Mr. McDADE. Does this year's request include funds for a second source, and if not, when do you anticipate requesting those funds?

Admiral AILES. For the Mark-50, yes, it does. Some of the procurement weapons are for second source qualification.

Mr. McDADE. What is that amount, please?

Admiral AILES. I believe that number is 50.

Mr. McDADE. Put it in the record.

[The information follows:]

The FY-87 WPN request contains $10.1M to initiate second source qualification.

VERTICAL LAUNCH ASROC

Mr. McDADE. We want to talk now about the vertical launch ASROC, or VLA. It is our understanding that full scale development will not be completed until March 1989—three years from now. Is this accurate?

Admiral AILES. Yes sir, that is correct.

Mr. McDADE. How much R&D funding remains for VLA?

Admiral AILES. I am sorry, I do not have it at the tip of my fingers. I will have to provide it for the record.

Mr. McDADE. Do you know how many R&D missiles have been funded to date?

Admiral AILES. No sir, I do not. I will provide it for the record.

Funding to complete the program, complete the funding in '88 and beyond, would be approximately $160 million, sir.

Mr. McDADE. Also, answer the following points in your response for the record:

How many tests have been conducted, and what were the results?

How many tests remain, and when will they be conducted?

When do you expect to be granted approval for full production?

[The information follows:]

The VLA development includes the MK 46 design (through FY-88), and the follow-on MK 50 variant (1987-1993). The total R&D budget after FY-86 is $93.6M.

The test program funded to date (FY-86) includes ten missile flights, 60 rocket motor firings, and a varying number of other missile component tests. Tests are conducted both at the missile and component levels.

There were two flight tests during D&V phase (Jul-Sep 84), both of which were successful. There have been 30 rocket motor static firings, 26 of which were successful. Of the four failures, two were caused by material and two were design failures. All were early in the program and led to design changes which have been proven by subsequent tests. There have been precomponent-qualification tests of the other missile components in 1984 and 1985, all of which were successful.

In 1986 there will be four flight tests at Naval Weapons Center, China Lake from March to June. There will be three flight tests from USS Norton Sound from July to September, which will qualify for the operational tests prior to the limited production decision. Component qualification tests will be conducted from April to October, which will include 14 rocket motor and thrust vector control assemble tests. In 1987 there will be 30 rocket motor tests and 8 flight tests. In 1988 there will be 5 flight tests during TECHEVAL and 15 during OPEVAL.

Approval for full production is planned for March 1989.

Mr. McDade. Last year, you estimated that 250 units could be purchased for $71.1 million. This year's request is for 200 at a cost of $74.3 million. What accounts for the 31 percent increase in cost, and how do you justify your procurement request in light of this cost increase?

Admiral Ailes. I will have to take that for the record.

[The information follows:

Last year's estimate did not include $20.9M for qualifying second source, which is included in this year's request. The remainder of the request (53.4) is consistent with last year's request, allowing for the difference between 200 and 250 missiles.

Mr. McDade. According to your budget documents full production contracts will be competitively awarded. Is any portion of your FY 87 request used for second sourcing, and if so, how much is involved and what will it buy?

Admiral Ailes. Yes, sir, 60 of the FY 87 missiles are in there for the second sourcing with the option for an additional 60 of the FY 88 procurement for second sourcing.

Mr. McDade. What ships are these VLAs intended to go on?

Admiral Ailes. These will go on all the ships that have vertical launcher systems, which is the CG-52 and beyond, the Arleigh Burke class DDG and 24 of the DD-963 class that we will convert to the vertical launching system, sir.

Mr. McDade. If you would prepare a list and insert in the record at this point all the specific ships, the specific ships that the system is going on?

Admiral Ailes. Certainly, sir.

[The information follows:]

The missiles will be used in all VLS ships of the DDG 51 class, all ships of the CG 47 class with vertical launchers installed (CG- 52 on), and the following ships of the DD 963 class:

DD963, DD964, DD965, DD966, DD967, DD968, DD969, DD970, DD971, DD972, DD973, DD975, DD977, DD978, DD980, DD981, DD982, DD985, DD986, DD987, DD988, DD991, DD992, DD997

Mr. McDade. Thank you.

Do you intend to second source the containers which are estimated to cost $40,000 apiece, and if not, why would you only second source the missiles?

Admiral Ailes. We are looking at that, sir. We have not made a decision, but I think we will come to that. There is a question as to whether we can find people who would be willing to second source the containers. That certainly is a position we are looking at very hard. It is desirable for us to do that for some other vertical launch ordnance that fits into these containers. We have not yet developed a strategy that will allow us to do that. That is, finding people interested in bidding.

Mr. McDade. Well, that is interesting. The Mark-46 torpedo container costs about $2,800. For the Mark-50 torpedo they cost about $5,000. Why do the containers for the VLA cost $40,000 apiece?

Admiral Ailes. The way the vertical launcher works, the container is in fact the launcher itself; it has a launching rail in there and the electrical service support systems for the torpedo, so in fact it is the launcher of the weapon.

Mr. McDade. It is not a container?

Admiral Ailes. No sir, and because of that, the expense is such that we got to——

Mr. McDade. We ought to stop calling it a container.

Admiral Ailes. Yes sir, I accept your guidance, sir.

Mr. McDade. What other components are being competed?

Admiral Ailes. For the vertical launch system?

Mr. McDade. Yes.

Put it in the record.

Admiral Ailes. Yes sir.

[The information follows:]

In addition to the missile the launcher cells and the canisters (the missile container) will be competed. The only item which will not be competed will be the test equipment for the weapon stations (two in 1987), which will assemble the missiles. The limited number of these sets does not justify competition.

Mr. McDade. Thank you, Mr. Chairman.

Mr. Chappell. Mr. Miller.

CAPTOR MINES

Mr. Miller. Thank you, Mr. Chairman.

Admiral, last year Admiral Altwegg testified that the Navy would like more Captor mines but could not afford them. Does this continue to be the reason the Navy did not provide funds to support additional production of Captor mines in the FY 87 budget?

Admiral Ailes. That is correct, sir.

Mr. Miller. Admiral Altwegg also mentioned some special tests that were being undertaken, and further testified—I want to quote here what he said—"If those prove to be successful, I would not be surprised to see us interested in reopening the production line." Now, that was before Congress had appropriated funds even though they were not requested, and my question is, do you believe that continued production of the Captor remains a viable option to accommodate future Navy requirements?

Admiral Ailes. We have conducted the special test ——— and as I think you are aware, sir, they are continuing. We are not yet in the position to make the decision as to whether we wish to continue with further Captor production.

At this time we do not plan it, and I don't foresee it occurring. Although, I must admit the testing ——— has been quite successful and quite encouraging, it appears at this time that our judgment is that the existing inventory will support the requirements there. So we are not at this time planning further production for Captor, sir.

Mr. Miller. Many of the Navy witnesses that we have had testified about the ever increasing Soviet submarine capability and the increasing burden being placed on our ASW assets, and yet the

Navy budget does not provide funds to continue production of the Free World's only deep water mine. Is it your opinion that currently available Captor mines will support Navy requirements as well as our commitment to NATO?

Admiral **Ailes**. We have provided a report to you, as you know, that describes that information. The gist of that position is that it suppports our primary minefields. Some of the secondary minefields we think will not be laid down currently with our primary minefield. It is an affordability issue. We have terminated the production.

There is certainly a variance of view in the Navy as to desirability of the number that would be procured, which does not support all possible minfields, but does support those which we call our primary minefields.

Mr. **Miller**. They are primary, as I understand it.

The question is, in view of the escalating Soviet submarine threat, would it not be prudent to continue the Captor production, because we have just had so many people from the Navy telling us what a threat the Soviet submarines are to us now, and would be in case we had an international problem. I guess what I am wondering is whether the Captor is something we are going to need in the future, whether you feel that we can meet all our commitments with NATO, whether we are going to have continued production and whether the Congress should place dollars in the budget for the Captor?

Admiral **Ailes**. I have explained the rationale of the Navy budget, sir. As you pointed out, there are a number of people within the Navy who have different opinions on that, but at this time that is the Navy's plan—it is purely an affordability issue with regard to the procurement of additional Captors and beyond that, I am not really able to add any further information, sir.

16 INCH GUNS

Mr. **Miller**. On another subject, Admiral Smith, I believe you had shown us a slide that had a 16 inch gun, and what I am wondering about it, are we now supplying and refurbishing our ships with such guns? As I remember, you made a remark when the slide was up there, that we are refurbishing some ships with 16 inch guns. With the missiles and rockets that we have today, and the guidance systems for those weapons do we need the conventional type guns on a battleship, or are we far more efficient with the missiles and the guidance systems for hitting the target?

In other words, we are spending a lot of dollars if we are replacing some of these guns, and should we be spending those dollars on the missiles?

Admiral **Smith**. Sir, I would like to ask Admiral Ailes, who is more a gunnery expert to take that question.

Admiral **Ailes**. We are not replacing the guns. The guns are still in use, in full service, and we have not reached that point. Those guns, as you know, sir, are only on battleships. Two are in commission, soon to be joined by the Missouri, and we are considering bringing the Wisconsin back, which would be the fourth.

The improvement that we have made on the guns since bringing the ships back active have been relatively modest. We have introduced more uniform powder instead of using older powder. We have gone through and been able to reduce dispersal of rounds substantially, and not at great cost.

We are looking at extending the range of the round and balancing a submunition round using basic technology which would extend the range of the weapon and again basically using most of the existing involvement that is already there.

Beyond that, we don't plan much additional upgrade. We think those are adequate and that will give us accurate, well placed rounds and with extended range, using basically existing technology. We think there is still a role for naval gunfire support. We continue to study that very carefully to see what that role is, and we think the 16 inch guns, because of their substantial hitting power, and their ability to project that power over substantial ranges, are a viable part of this alternative and something that you really can't do as well with the missile in the Navy gunfire support role.

For some of the other roles, where missiles become more the choice candidate, against targets that are deeper inland, and targets that are in the amphibious assault area, then we chose the missile, but we are pleased with the performance of the 16 inch guns and we have made a large investment in improving them or substituting newer guns. It is basically a relatively modest investment in the guns as they are now, sir.

Mr. **Miller**. Again, with the missiles that we have and the accuracy that we have, because of the guidance systems that we have, nevertheless you still feel that those guns on the battleships are not just for show, not just to make a big noise and scare people, but they are truly useful and there are places where they can be used that missiles could not be used. Is that what I understand?

Admiral **Ailes**. Yes sir, I do. We are introducing the laser guided projectile, which allows us to do the naval gunfire support much more accurately using a laser illuminator operated by the Marines or soldiers that are ashore. We think this capability provides a role that is unique to the guns. Upon illuminating a particular target, we are able to place conventional ordnance on that target very, very quickly and very accurately on the initial round, substantially reducing the rounds that we would have to fire to neutralize that target.

So I still believe that there exists a strong role for the guns in naval warfare, in particular in the gunfire support of amphibious forces.

FLEET HOSPITALS

Mr. **Miller**. Mr. Chairman, I have just one other question. I am not sure who had the chart on the board, it was chart number 6, and it told about our fleet hospital ships and——

Admiral **Smith**. Yes sir.

Mr. **Miller**. We have two new hospital ships, one that will be delivered in the very near future, I understand, another to come on board maybe in a year or less, and then we have funds being requested for hospital ships. Now, would this be some supplies for hospital ships, or what were those figures on that chart and what did they represent?

Admiral Smith. That slide might have been a little bit confusing, Mr. Congressman. That showed a fleet hospital and a fleet hospital is really a combination of all the equipment that you need to put a hospital in the battle scene, not tied to a ship. It is the tents and the medical supplies that go with setting up a hospital of 200 beds, or 600 beds anywhere that you would need one on short notice.

What we have done is we have built what we call the fleet hospital. It is really a collection of all the pieces in the inventory which is put into a warehouse so that that equipment can be taken to an emergency location and set up with the assistance of a trained team. Once constructed, we have an operating hospital in the form of tents, with cots and blankets and pillows and you can bring the wounded to that location rather than move them great distances by air, such as we had to do in the Beirut crisis.

So, a fleet hospital is all that equipment packaged together in one central location, so it could be airlifted to a scene somewhere in the world.

Mr. Miller. So that fleet hospital would really be a land-based hospital?

Admiral Smith. Yes sir.

Mr. Miller. Then on top of that, we have the hospital ships?

Admiral Smith. We have two hospital ships.

Mr. Miller. Do we need both land based and ship hospitals? Are we spending money for ship hospitals where we could use the land based fleet hospitals?

Admiral Smith. I think the general consensus is that the fleet hospital ship, the floating hospital, has the ability to take patients which need more intensive care, need more sophisticated operating equipment than you can provide in a tent. A fleet hospital ashore is sort of a land hospital without walls, if you will, and that is more a casualty control center than it is long term patient care which is where the hospital ships play a role.

Mr. Miller. Thank you, Admiral.

Thank you, Mr. Chairman.

ANTISURFACE SHIP WARFARE TORPEDO

Mr. Chappell. Admiral your budget includes a request for $17 million to procure low cost antiship torpedoes. When was this requirement established?

Admiral Smith. That requirement was established during our budget process. It was a decision made by the Secretary of the Navy to develop a low cost torpedo to be used by submarines against Soviet merchant fleet.

Mr. Chappell. Last year?

Admiral Smith. Yes sir, it has been within the past 12 months.

Mr. Chappell. How much R&D funds are being requested this year?

Admiral Smith. There has been only study work. The intent was to take off-the-shelf components from the interested vendors, and essentially fabricate a low cost torpedo, low cost meaning the FRP is currently for $200,000 or less per torpedo. The program is structured for industry to compete for a torpedo of that cost to see what industry could provide as a counter to the Soviet shipping fleet.

Mr. CHAPPELL. Do you know how many dollars you have spent on this so far?

Admiral SMITH. No sir.

Mr. CHAPPELL. I am really asking about research and development money.

Admiral SMITH. Not in R&D in the sense of doing research.

Mr. CHAPPELL. Mostly study?

Admiral SMITH. Yes sir.

Mr. CHAPPELL. Are you asking for any R&D funds in this budget?

Admiral AILES. I am under the impression we are not but——

Admiral SMITH. That is correct.

Mr. CHAPPELL. Your budget——

Admiral SMITH. The candidate would be the interested bidder, who would come forward with his torpedo.

Mr. CHAPPELL. Do you have any of those now?

Admiral SMITH. An interested bidder? Yes sir.

Mr. CHAPPELL. Who are they?

Admiral SMITH. I think we put our an announcement in Commerce Business Daily and I think we have received an expression of interest from five or six different companies.

Mr. CHAPPELL. Have you evaluated those or is this part of the study?

Admiral SMITH. No, this is—the notice went out in the Commerce Business Daily and we got back——

Mr. CHAPPELL. You've got interest?

Admiral SMITH. That is right.

Mr. CHAPPELL. So you haven't proceeded beyond that point?

Admiral SMITH. That is correct.

Mr. CHAPPELL. What is the—I guess you don't know the design commitment yet, you are strictly in the study phase, is that right?

Admiral SMITH. That is right.

Mr. CHAPPELL. What is the estimated program unit cost for this weapon? You wouldn't have anything on that either?

Admiral SMITH. No.

Mr. CHAPPELL. You are shooting for $200,000?

Admiral SMITH. The RFP has been written such that it is industry's job to come in and give us the best torpedo they can come up with for $200,000.

Mr. CHAPPELL. Have you determined what capability or what difference in capability you are going to expect between the low cost antisubmarine ship torpedo and Mark-48 mod 4?

Admiral SMITH. No, sir, I don't believe there has been I think the approach has been that we would ask industry for, we have used——

Mr. CHAPPELL. Let me ask it this way. What kind of capability are you asking for in this RFP?

Admiral SMITH. We are asking for I think a ——— torpedo.

Mr. CHAPPELL. A ——— torpedo to cost less than $200,000 baseline?

Admiral SMITH. ———.

Mr. CHAPPELL. What is the Mark-48 cost, the Mark-48 mod 4?

Admiral SMITH. The Mark-48 torpedo is a ——— torpedo.

Mr. CHAPPELL. What is the cost of it?

Admiral SMITH. Cost is—we will get that for you. There is R&D money in '87 budget for the ASUW torpedo.

Mr. CHAPPELL. Low cost torpedo?

Admiral SMITH. Yes sir, the low cost torpedo.

Mr. CHAPPELL. Are you saying there is money in the budget?

Admiral SMITH. Yes sir.

Mr. CHAPPELL. How much?

Admiral SMITH. $6.3 million in '87 and there is $700,000 in '86, for study effort. Not R&D.

Mr. CHAPPELL. Can you give us the cost delta between the two weapons? Are you still looking for the numbers?

Admiral AILES. Yes sir, we will have it in a moment.

[CLERK'S NOTE.—The Department was unable to provide a response in time to be printed in this hearing volume.]

Mr. CHAPPELL. While you are looking for that, what is the inventory objective of the low cost torpedo?

Admiral SMITH. ———.

Mr. CHAPPELL. In what time frame?

Admiral SMITH. Over the next five years.

Mr. CHAPPELL. Do you intend to deploy these assets to the fleet, particularly since there is limited space on a submarine to carry weapons?

Admiral SMITH. The intent is that we would stockpile them as a reserve weapon, then load them out in wartime.

Mr. CHAPPELL. How many per ship?

Admiral SMITH. We have got 100 submarines. ———.

Mr. CHAPPELL. What weapons would you have to take off of the ship in order to make room to carry these anti-surface ship torpedoes?

Admiral SMITH. At that time, we would be talking about Mark-48 ADCAPS and some of those would probably have to come off.

Mr. CHAPPELL. Tell us what your present load-out is for your current weapons submarines?

Admiral SMITH. I would like to furnish that for the record, Mr. Chairman, to make sure that is right, because it is currently a combination of Mark-48 torpedo and subrockets and Harpoons and I would take that for the record.

[The information follows:]

The ASUW torpedo is a reserve stockpile weapon for deployment in mission against enemy surface shipping.

In the ASUW scenarios envisioned, it is anticipated ———.

The average weapons load carried by 637/688 Class SSN ———.

Mr. CHAPPELL. Well, in what degree will operating and support costs be affected in maintaining a diverse heavyweight torpedo inventory

In other words, how is it going to affect your operating and support costs? Is it going to increase it?

Admiral SMITH. It is going to increase it, because——

Mr. CHAPPELL. How much?

Admiral SMITH. Well, I don't know that we have determined that, Mr. Chairman, because we have to keep some of those torpedoes on our tenders, advanced deployed. I think that is where these increases would come from.

Mr. CHAPPELL. You have not identified those costs yet?

Admiral SMITH. We have not identified those costs, that is correct. We probably won't be able to until we have a handle on what the torpedo was going to look like.

Mr. MAGLIOCCHETTI. Admiral, with respect to potential design changes looking at candidate torpedoes, converting older weapons was the same approach used with the SLMM, and in the first year or two the Navy ended up with some 500 design changes. We still haven't received or we are just in the process of receiving the FY 82 deliveries funded mines. Is there a possibility that we can end up with the same thing with the ASUW torpedo?

Admiral SMITH. The requirement for this torpedo is to have a transparent capability if you will, to the existing fire control system, through existing aboard ship Mark-117 system or 113 system.

The quality control that goes into that transparency is going to be the key to what changes would be required. If we can engineer that transparency through specificational control correctly, then we can manage that problem. I think that is a very difficult problem.

Mr. MAGLIOCCHETTI. Thank you.

Thank you, Mr. Chairman.

SUBMARINE LAUNCHED MOBILE MINE

Mr. CHAPPELL. Last year Congress deleted all but $3.7 million of the Navy's $23.7 million request for the submarine launched mobile mine, SLMM. This action was based on concerns with both technical problems and delivery slippages in the program. Although last year's plan called for 273 units to be procured in FY 87, your budget cancels the program through 1991. What was the basis for this decision?

Admiral SMITH. I think Admiral Ailes has that.

Admiral AILES. As you know, we plan no procurement of SLMM in '87. We have completed that program and have terminated the buy with the FY 85 procurement. We have had some trouble with the delivery on that system, but right now, we are well on top of that program. That will ——— essentially reduce our previously planned buy which was about ———.

Mr. CHAPPELL. Isn't that a premature cancellation?

Admiral AILES. We are looking at—that is our plan if I understand your statement.

Mr. CHAPPELL. You don't know whether it is premature or not?

Admiral AILES. We are looking at making it a deeper and greater range mine, thereby making it more effective for us. I think we have decided we can do that. We have to decide whether we want to go back and backfit the mines that we already have, rather than go into production for additional mines. We are obviously influenced very much by the problems we have had in production.

Mr. CHAPPELL. Can we then expect any production beyond 1991?

Admiral AILES. We have none planned at this time, sir, and we don't foresee any.

Mr. CHAPPELL. It is cancelled, period, as of now?

Admiral AILES. That is our——

Mr. **Chappell**. You don't intend to have any further procurement?

Admiral **Ailes**. That is our current plan.

Mr. **Chappell**. How many fully assembled units have been accepted to date?

Admiral **Ailes**. The number is modest, eight or ten or so. I don't have it right at my finger tips, I will have to furnish it for the record. As you know, we are still proofing the system.

Mr. **Chappell**. While you are getting it for the record, I assume you have got somebody working on it. From what fiscal year will it be funded? See if we can get that information. Have you received and accepted all Fiscal Year 1982 funded mines? I guess you can't answer that. You will have to get that one, too.

[The information follows:]

Eight complete SLMM mines have been accepted from the FY 1982 funded program. An additional 22 explosive sections have been delivered for explosive loading, 9 are ready for explosive loading and the remaining 13 are undergoing inspection. In addition, 73 main assemblies have been produced and are awaiting proofing.

No. there were 101 SLMM weapons funded in FY-82.

Mr. **Chappell**. Last year's testimony shows that Dewey made deliveries against 76 percent of the FY 82 line items. What percentage of the FY 83, 84, and 85 line items remain underlivered?

Admiral **Ailes**. I will have to provide that for the record. I have the spread sheet tht will provide it.

[The information follows:]

Fiscal year:	*Percent*
1982	5.2
1983	20.6
1984	32.8
1985	100.0

Mr. **Chappell**. Why don't we take a 30 minute recess to see if you get some answers together on some of these things and come back at 4 o'clock and see. You all run through these questions and see what answers you can come up with and let's see how much progress we can make. Will you do that?

We will stand in recess for 30 minutes.

[A short recess was taken.]

Mr. **Chappell**. The hearing will come to order.

There were certain questions that were asked earlier and we thought some of them were incomplete and we have taken a short recess to give the opportunity to get clarification on those answers and we will go to those and see how much progress we can make.

MK 92 CORT

Admiral Smith. Mr. Chairman, I do have some of the answers and hopefully they will be satisfactory to the committee. We will continue working on the problem if that is not the case.

Relative to the question about the CORT deficiencies, we have been able to get in touch with the program manager and we do have some of those listed here.

Mr. Chappell. Will you give us those answers?

Admiral Smith. Yes, sir.

The deficiencies that concerned the program manager, and I have about nine of them here——

Mr. CHAPPELL. Read them.

Admiral SMITH———.

Mr. CHAPPELL. Were the others that you have just read considered major or minor?

Admiral SMITH. I think these are major items, all in the process of being corrected. I am still going through—he just listed nine deficiencies.

Mr. Chappell. You don't know how to categorize them?

Admiral Smith. No.

Mr. Chappell. The built-in test equipment does not meet the design specifications———.

Those were the nine items, Mr. Chairman.

Mr. Chappel. All right, fine. go to the next question.

SQQ-89

Admiral Smith. The next question that I have some answer for is in your direction to procure the three service test models of the video generator for the SQQ-89 and ASW combat system. The Navy is prepared to release the RFP in June of this year for a competitive award using fiscal year 1987 R&D funds. That means that we would not meet your target data of contract award by the end of September. I will have to take for the record why we can't do that.

Mr. CHAPPELL. Provide for the record why you can't do it and tell us any alternatives that you have in place whereby you could do it.

MK 92 CORT

I assume that on the CORT questions again, isn't it true that all of these problems that you have listed can be relatively easily corrected?

Admiral SMITH. I am not aware of that, Mr. Chairman, but I will provide the difficulty of that for record.

[CLERK'S NOTE.—Classified insert removed.

Mr. CHAPPELL. Go ahead with the next question.

SQR-17 TRAINER

Admiral SMITH. The next question was the status of the SQR-17 trainer. It is the intent of the Navy to comply with your direction to procure those trainers. We are currently hung up on the legality of doing that without a competitive procurement RFP, and that issue is not resolved within the Naval Sea Systems Command.

Mr. CHAPPELL. What is the legal problem?

Admiral SMITH. It is the guidance that the Secretary of the Navy has put out that says compete these systems. That is the issue that the lawyers are working on now.

Mr. CHAPPELL. They have been pretty slow raising the issue, haven't they?

Admiral SMITH. Yes, sir.

Mr. CHAPPELL. Go ahead.

Admiral AILES. I have a couple of items here.

SUBMARINE LAUNCHED MOBILE MINE

With regard to the submarine-launched mobile mine, you asked the question—I think we answered the question—can we expect procurement beyond 1990. We did not plan such a procurement.

You asked how many fully assembled units have been accepted to date. ——— explosive sections have been accepted. These come from the 1982 buy and the question was asked, have you received and accepted all fiscal year 1982-funded mines.

The answer to that question is no.

The next question was specific sets of percentages of delivery by the contractor and I will have to take that for the record. We haven't been able to pull that out quickly enough.

[The information follows:]

The percentage of total contract cost the undelivered items represent is:

Fiscal year:	*Percent*
1982	4.0
1983	16.9
1984	16.1
1985	100.0

Dewey encountered early production problems related to manufacturing processes and the documentation provided by the Navy. Dewey has not produced at least one of every item called for on these contracts. We are confident that the major problems have been solved and that volume production can now proceed.

Admiral **Ailes**. You asked the status of the upgrade program and is it currently being funded.

We are doing test work there, but we have not made a decision.

Can we expect to see a request for an improved mobile mine, and if so, when would that be?

We have not yet made a decision on that. We are doing feasibility tests. we expect to continue tests in the third quarter of fiscal year 1986 and do not yet have an opinion as to whether we will make a request for a mobile mine, but we are not disposed not to do so.

I think we have an open mind and there is a war-fighting issue there that I think both of us agree on.

SQR-17

Mr. **Chappell**. Admiral Smith, on the SQR-17, I think the message ought to be carried back that we are talking about an engineering change. If you are talking about an engineering change, why do you need competition?

Admiral **Smith**. I understand that, Mr. Chairman.

Mr. **Chappell**. I think the message ought to get back that Congress feels very strongly about it. It is an engineering change, and unless——

Admiral **Smith**. I will make that point directly to Mr. Pyatt.

Mr. **Chappell**. I would ask you to let the Secretary of the Navy know that point, too. We are not talking about going back to something we have to compete. The committee wants some answers.

Admiral **Smith**. I understand.

Mr. **Chappell**. Go ahead.

MK 46 VS MK 50

Admiral AILES. The question was raised on why the need to procure both the MARK 46 and the MARK 50 in fiscal years 1987 and 1988.

The answer that I have been able to confirm remains the same, ———.

We think that even with a program of both MARK 46 and MARK 50 procurement we would ———.

As to the number of contractors that are serious in the competition for the MARK 50, there are three organizations, several involved with teaming, but there are three presently who have expressed an interest there and we expect to bring them on such that we will have a full competition in 1990 using some production qualification in 1988—1987 and 1988 to meet that particular effort.

One of the questions that was raised was the relative costs of the torpedo.

MK-48 COST VICE ASUW TORPEDO

The MARK 48 torpedo for our fiscal year 1985 buy, our last buy, was a cost of $849,000 against the low-cost surface torpedo cost that we are estimating capped at $200,000 so the Delta is about $649,000, sir.

Mr. CHAPPELL. All right. Does that complete the answers that you were able to get within that time frame?

Admiral AILES. I think actually that is probably as well as we could do, sir.

Mr. CHAPPELL. Mr. McDade, do you have further questions?

Mr. McDADE. No, thank you.

Mr. CHAPPELL. Put the rest of them into the record and respond as quickly as you can.

When responding to the questions for the record, err on the side of repeating questions already asked if you have additional information to provide.

[CLERK'S NOTE.—Questions submitted for the record and the answers thereto follows:]

TOMAHAWK—TLAM/D BUDGET

Question. Why is TLAM/D budgeted in FY 1987 at nearly double the unit cost projected in the FY 1986 submission?

Answer. The entire cost of the missile is derived from the P-12 exhibit, not the P-22A exhibit. In the FY 1986 budget submission, the FY 1987 TOMAHAWK Land Attack (Dispenser), or TLAM/D, was budgeted at $2.595M. The FY 1987 President's Budget shows the missile budgeted at $2.469M, for an expected reduction of 4.9% over that predicted last year.

Question. In general, explain any differences in the way TOMAHAWK budgets are presented and displayed in annual submissions.

Answer. The FY 1986 P-22A, or Procurement History and Planning exhibit, deliniated the major hardware contract items. Not shown on the P-22A for FY 1986, but displayed on the P-12, or missile Cost Analysis exhibit, are those lesser cost hardware items which are supplied as Government Furnished Equipment. The BGM-109B, or TASM, entry on the FY 1986 P-22A showed the expected contract price of the TASM All-Up-Round (airframe and guidance section) from the dual source contractors, (1,551M) and the expected engine contract price from the competing engine contractors ($0.245M). Not shown on the FY 1986 P-22A because of spacing problems, but shown on the P-12. are the booster ($0.130M), payload ($0.022M), shipping container ($0.017M), missile radar altimeter (0.22M), and either a cannister for surface ship launch ($0.061M), or a vertical ($0.679) or horizontal ($0.110M) submarine launch capsule. The average cost of a TASM in FY 1986 was predicted to be $2.227M.

Because of the potential confusion over the issue, especially on the TOMAHAWK program with its multiple variants, launch configurations, and items of Government Furnished Equipment, Navy Comptroller directed the project to display the entire expected cost of the delivered missile, by variant, by fiscal year in the FY 1987 P-22A, updated for any actual information which may be available. The FY 1986 TASM price is now shown in the FY 1987 P-22A as $2.092M, or 6.1% lower than predicted and reflected in the FY 1986 P-12. The TASM in FY 1987 is budgeted at $2.068M, or a further expected reduction of 1.1%.

TOMAHAWK ALL-UP-ROUND

Question. The All-Up-Round program for producing TOMAHAWK has been in place for over 2 years under this program two competing firms are building missiles which are supposed to be functionally identical. Has it in fact resulted in lower cost?

Answer. The missiles being built by the two competing firms, and the Government Furnished Equipment such as the engine, reference measuring unit computers, and digital scene matching area correlators, also produced by competing firms, are not only functionally identical, they are physically identical. The reason for this is all government furnished equipment furnished to the missile contractors must be interchangeable. Test equipment at both manufacturers facilities and depots must return identical readings for the same configuration of missile.

The dual source acquisition strategy pursued for the Cruise Missile, not only for the airframe and guidance set, but also for the other subsystems has indeed resulted in lower costs than what could be expected from a sole source acquisition strategy. A sole source firm tends to manufacture all items "in-house" to maximize return on investment. However, under the pressures of competition, the contractors are constantly seeking small, more specialized firms who can manufacture parts much more efficiently, and at less cost than a major aerospace prime contractor. To date it is estimated that the Government has saved approximately $60M in the TOMAHAWK competitive environment.

TOMAHAWK MANUFACTURING DISCREPANCIES

Question. Have any discrepancies or differences been identified in missiles being built by the two firms?

Answer. No discrepancies or differences have been identified. The reason is that last year both contractors completed an extensive qualifications for technology transfer initiated two and one half years previous. The purpose of this qualification process was to ensure that identical hardware was produced at each company. In addition, concentrated efforts to ensure that product baselines are identical with each contractor are continuously reviewed. Identicality of hardware is a subject discussed and differences resolved during quarterly production reviews held between the government and each respective producer.

HARM

Question. The Navy is requesting $256.7 million to procure 1,100 missiles, a program for which the Navy is executive agent. The corresponding Air Force request for FY-87 is $493.4 million for 2,130 missiles.

Last year, there were concerns about the conformance of produced missiles to specification. Last month, a teardown inspection of a missile took place to check that conformance.

What were the results?

Answer. Results of the Naval Avionics Center configuration audit conducted in June 1985 indicated that the production of the HARM missile was in conformance with the government drawing package. The recent teardown inspection was conducted by the Navy program office to check the quality of workmanship in the missile and to ascertain if additional weapon inspection procedures and production processes were necessary to ensure continual high weapon reliability and quality while production rates were increasing.

Question. Is it true that there were in excess of 800 discrepancies of varying severity?

Answer. The teardown team initially recorded non-conformances based on unmodified military specifications with the intention of culling this list upon review of the contract specifications and drawing package which tailor some of the military specifications more precisely to HARM's requirements. This process is continuing with a report due at the end of March 1986. The exact number of nonconformances is unknown at present, but will be significantly less than 800 with the vast majority being categorized as minors.

Question. How many of those were classified as major problems?

Answer. The preliminary count of major non-conformances is 28, a 45% reduction since the Naval Avionics Center configuration audit. It is not likely this number will change in the report due at the end of the month.

Question. For how long was acceptance of missiles stopped?

Answer. From 21 February 1986 to 27 February 1986. However this has no impact whatever on the contractual delivery schedule. The contractor was ahead of schedule prior to 21 February and remained ahead of schedule after 27 February.

Question. Is it true that the Navy has agreed to waive non-conformance by the contractor? Why has the Navy decided to allow deviation from the agreed specification?

Answer. It is not true that the Navy had agreed to waive nonconformance of specifications by the contractor. The Navy has agreed to conditionally accept 101 assembled missiles based on successful completion of additional environmental tests and imposition of a three year warranty on workmanship and material on the affected missiles at no cost to the government.

Question. What recourse will the Navy have if a failure occurs in a HARM fired in combat?

Answer. The recent teardown found no critical non-conformances that would degrade weapon performance. The reliability and performance of HARM in the fleet has been superb and the recent teardown indicates good quality workmanship is being maintained in the production line.

Question. The combined Navy and Air Force requests for HARM, if granted, would require a ramp-up in production rate of 42 percent, from 190 missiles per month for the FY-86 buy to 270 for the FY-87 buy. What is the rate at which missiles are currently being produced?

Answer. FY-84 deliveries will increase from 40 per month at present to 110 per month by October 1986.

Question. What is the basis for your belief that so steep a ramp-up can be achieved?

Answer. One hundred ninety (190) missiles a month to 270 per month is a ramp-up factor of 1.5 which occurs in the seventh year of production and is judged to be low risk.

Question. What funds are included in the FY-87 request, either Navy or Air Force, to increase the production rate?

Answer. In conformance with present Navy acquisition policy the FY-87 budget of the Navy and Air Force contains no funding for tooling and test equipment to increase the production rate.

Question. The P-1 document for FY-87 shows the Navy request for HARM as "MYP", which presumably stands for multi-year procurement. The Air Force request is not listed as MYP. Navy back-up documentation submitted to the Congress does not describe a MYP of HARM. Admiral Aile's statement does not mention MYP of HARM. What are the Navy's intentions?

Answer. Navy intentions are multi-year procurement for FY-87, FY-88, and FY-89.

Question. If a MYP of HARM is planned, when will justification and economic analysis be submitted to the committee?

Answer. MYP analysis of HARM for Navy and Air Force is forwarded.

Question. Absent a MYP, how would the Navy propose to contract for FY-87 missiles?

Answer. The Navy would contract on an annual basis in FY-87 and the outyears.

Question. The future of HARM appears to be uncertain. The Air Force has reduced its procurement objective. Lower levels in the Navy are advocating a so-called "Block 4" change in the missile. We are told that doubts are being expressed in some quarters about HARM's ability to counter the threat projected for the 1990's. What explanation, if any, has the Air Force given to the Navy for reducing its HARM procurement objective to 85 percent of the level reported last year?

Answer. The Air Force has reduced its HARM procurement objectives due to budget constraints.

Question. Please explain the Navy's plans for dealing with the proposed "Block 4" HARM.

Answer. The Navy is staffing the proposed improvements to HARM called "Block 4" as a POM-88 issue. No authorization or funding have been approved for this program.

Question. What is the "Block 4."

Answer. "Block 4" is a proposed improvement program for HARM which involves guidance section hardware changes to the missile to be developed under a FFP contract and implemented into FY-89 missiles at no increase over the presently estimated FY-89 recurring unit price. Provisions to qualify a second-source to complete for the procurement of retrofit kits and/or forward fit guidance sections are included.

Question. To what extent does "Block 4" impact on the Navy's ability to incorporate the Low Cost Seeker in a block change to HARM? To what extent does it impact on Secretary Lehman's declared policy of seeking maximum competition in the production of antiradiation weapons?

Answer. "Block 4" has no impact on the Navy's ability to incorporate the Low Cost Seeker in a block change to HARM. Current plans are to incorporate the Low Cost Seeker into HARM commencing in FY-90. "Block 4" would not conflict with Secretary Lehman's policy of maximum competition in the production of anti-radiation weapons.

Question. When will this proposal be submitted to the Congress?

Answer. If approved, the "Block 4" HARM improvement would be included in the FY-88 budget request.

Question. Explain the Navy's plans for incorporating the Low Cost Seeker in HARM.

Answer. The Navy plans to incorporate the Low Cost Seeker into HARM commencing in FY-90.

PHOENIX

Question. The Navy is requesting $289.3 million to procure 205 Phoenix missiles. Of that number, 149 are to be procured from Hughes, the incumbent contractor, and 56 from a second source yet to be chosen.

Admiral Ailes' statement holds that production problems at Hughes have been overcome. However, the quantities to be procured with FY 1986, 1987, and 1988 funds are shown to be 265, 149, 250.

Does this sharp decrease from FY 1986 to FY 1987 agree with the statement that problems have been overcome?

Answer. During the budget review last summer/fall, the FY 1987 missile quantity was reduced based on Hughes' poor delivery performance at that point in time. Hughes has subsequently overcome more serious production and quality problems, and is now experiencing only minor problems associated with ramping up to production rate. We expect that they will be producing at a nominal rate of 23 per month in the summer of 1986, with the capability to produce at 30 per month.

Question. What effect will this eratic production schedule have on unit costs?

Answer. The reduction from 265 missiles to 149 missiles from FY 1986 to FY 1987 resulted in a Hughes unit cost increase from $700.5K to $808.5K (+$108K). This increase was caused by diseconomies of scale, and fixed costs at Hughes being spread over a lesser number of units. Considering the magnitude of the quantity reduction (−116 missiles/43.8% of the previous year production), this estimate of unit cost increase is considered conservative.

Question. The FY 1987 column of the FY 1986 budget projected that 420 missiles would be requested in FY 1987. Please explain why the number of missiles now requested has declined so sharply?

Answer. The FY 1987 column of the FY 1986 budget requested 420 missiles (350 from Hughes/70 from second source). The quantity from Hughes was reduced based on poor delivery performance at the points in time at which the budget was reviewed within the Department of Defense. The second source quantity was reduced based on the assumption that the second source would experience problems ramping up similar to those experienced by Hughes.

Question. The Navy continues to pursue a second source program for Phoenix, for which $149 million are included in the request. How much of the $92.9 million provided in FY 1986 for the second source program has been obligated or expended?

Answer. Of the $92.9 million provided in FY 1986 for the Phoenix second source program, $17.2 million has been obligated.

Question. Provide for the record a listing of items to be so procured, and the cost of each.

Answer. The following is a listing of items to be funded in FY 1986 to support the second source effort:

	TY $M
Long-lead material procured from Hughes for second source	$26.5
Government Furnished Equipment	6.2
Engineering Services/Data Validation from Hughes	10.0
Government Acceptance Test Equipment	40.8
Government In-House Engineering	9.4
Total	92.9

Question. What is the current status of cost analysis and proposal evaluation for a second source?

Answer. The OSD Analysis Improvement Group (CAIG) will begin to review the Navy's second source analysis in mid-March 1986. The CAIG will issue a report to the Secretary of Defense approximately 1 May. The analysis has been updated with recent actual financial data and continues to show favorable economic benefits to the government. The proposals from the prospective second sources, Ford and Raytheon, are currently being evaluated with an anticipated award to one of the contractors in May 1986 subsequent to the Secretary of Defense certifying to Congress that the second source program is supportable within the Five Year Defense Plan.

HARPOON

Question. The Navy is requesting $128.4 million for 94 HARPOON missiles. Of that quantity, 75 are radar guided of the type already in production, and 19 are a proposed new weapon using IR guidance.

The Navy's production profile for radar HARPOON for Fiscal Years 1985 though 1988 is: 354, 370, 75, 145. Why is the profile so erratic?

Answer. Surface platforms (OP-03 sponsor) achieved Non-Nuclear Ordnance Requirement (NNOR) programming objective with the FY-86 procurement year. Therefore, surface HARPOON procurement in subsequent fiscal years is significantly reduced to those quantities needed for maintaining inventory losses and to provide for emerging new platforms as required.

a. The submarine community (OP-02 sponsor) has also satisfied NNOR programming objectives and has ceased HARPOON procurement after FY-86. Because of the introduction of TOMAHAWK, submarine HARPOON requirements will remain adequate without additional procurement.

b. Air launch HARPOON NNOR requirements (OP-05 sponsor) have not yet been satisfied and in fact have continued to grow as NNOR target bases and allocations have been adjusted. While OP-05 has continued to procure additional HARPOONs in FY-87 and out, fiscal constraints and relative budget priorities have precluded any significant quantity increases to offset the surface and submarine procurement reductions. Additional air launch HARPOON procurement will continue to be addressed in budget planning.

Question. Why has the FY-87 number been halved, from a planned 153 to 75?

Answer. The FY-87 radar HARPOON program was reduced $54 million to provide funding for the Standoff Land Attack Missile (SLAM) program. The overall effect of the funding offset on the HARPOON production program was a reduction of 78 radar missiles and an increase of 19 SLAM missiles.

Question. What will these wide swings in quantity add to the cost of the program?

Answer. Through FY-86, the Navy has procured typically 330 HARPOON missiles a year as surface, submarine and air inventories have been built up. In FY-87 and beyond air configured HARPOONs will be procured for inventory build, ———. Average cost for these missiles would be about $1,000 per unit. The procurement of only 75 missiles in FY-87 is expected to result in a unit cost of about $1,400, or about $30M more than had been planned for that procurement year.

Question. Why is the Navy reducing HARPOON production and simultaneously requesting $11.7 million in advance procurement funds "to support a production increase" for a "surge"?

Answer. The reasons for the Navy's decision to reduce HARPOON production are discussed above. Based on the current FY-87 and FY-88 production rates, added production capacity would be required to sustain the fleet's war fighting capability in the event of a contingency. Today's planned procurement of surface configured missiles is sufficient ———. These shipfill projections are made in anticipation of future certification of ships as HARPOON firing platforms. Production rates would have to be increased in a contingency situation to fulfill both resupply and new platform requirements. The $11.7 million for surge is to fund long lead items to enable an increase of the rate of production. Surge does not represent the procurement of additional missiles. These items are part of the normal bill of materials and are to be used in the subsequent year's production. As a result, the surge funding will not add to the total program requirements. Due to the low procurement quantities beginning in FY-87, the manufacturer will reduce inventories and orders for long lead items to levels which reflect the lower production rate. The intent of the surge funding is to enable the manufacturer to increase his production rate by 10 missiles per month within 6 months of receiving notification to do so.

Question. The Congress provided FY-86 funds of $314.9 million to procure 395 HARPOONs. Why does the FY-86 column of the FY-87 budget show $286.3 million for 370 missiles?

Answer. Several reductions in the FY-86 HARPOON program have combined to reduce the total authorized by $28.6 million. These reductions include the following:

	Million
(1) Naval Industrial Fund Unbilled Balance	$1.4
(2) Standoff Land Attack Missile (SLAM) Offset	11.7
(3) Congressional Inflation Adjustment	15.5
Total	28.6

The combined effect of these reductions was a decrease in FY-86 missile procurement from 395 to 370 missiles.

Question. What happened to $28.6 million?

Answer. A Congressional Reprogramming Action (DDForm 1415-1) requesting an inter-appropriation transfer of $11.7 million from the HARPOON program in the WPN appropriation to initiate integration effort for SLAM in the RDT&EN, appropriation was submitted to the Comptroller of the Navy in February 1986.

The remaining $16.9 million reflects decreases in the HARPOON program due to undistributed Congressional reductions related to inflation adjustments.

Question. Why has the Navy reduced the FY-86 quantity of missiles to be procured?

Answer. Repricing the FY-86 HARPOON program to remain within the $286.3 million control total resulted in a procurement of only 370 missiles.

Question. The proposed IR HARPOON is a new start, for which no R&D or procurement funds have previously been provided. What is the requirement for this weapon?

Answer. The proposed IR HARPOON is called "SLAM." The Standoff Land Attack Missile (SLAM) is a land attack variant of the HARPOON missile. It is an interim solution to an urgent need for an Advanced Strike Weapon System which fills the tactical weapons gap between sophisticated long range stand-off cruise missiles and free-fall munitions. The primary threat addressed by this weapon system is the surface-to-air threat. Over land, a continuing proliferation of surface-to-air missile (SAM) and anti-air gun systems, both radar and optically directed, represent the major threats to attack aircraft, whether carrier-based, or USMC forward deployed. Strike operations against major enemy forces would be opposed by a full spectrum of overlapping, distributed SAM and gun systems coordinated by an effective command and control system. Increasingly, similar capabilities will be acquired by lesser developed countries thereby providing them a means for acquiring local air superiority against attack aircraft.

SLAM provides a stand-off capability against tactical surface targets on a world-wide basis under adverse visibility and poor weather conditions. ———.

Question. Describe its components.

Answer. The SLAM missile configuration retains the AGM-84D HARPOON ordnance and propulsion sections intact with the exception of some minor wiring modifications in the ordnance section. ———.

The SLAM guidance section retains commonality with the HARPOON mid-course guidance unit through retention of the 3 axis attitude reference assembly, general purpose digital computer, radar altimeter and power supply. Modifications to the guidance section adapting the HARPOON MGU to the SLAM mission include ———.

Question. When will flight testing take place? Provide for the record a detailed description of the testing program and the milestone events within that program.

Answer. Due to the ready availability of components, captive flight testing will begin immediately upon program implementation to support subsystem integration and verification testing. This phase is designated DT/OT-II and will test the IR seeker, mid-course guidance, data link and electronics integration. DT/OT-II results will support a recommendation for pilot production of RDT&E test missiles. Free-flight testing will consist of seven (7) live missile firings, and will begin with DT-III from both primary (A-6) and secondary (F/A-18) aircraft. OT-IIIA will run concurrently with DT-III and support a recommendation of readiness for OPEVAL. The results of the OPEVAL (OT-IIIB) will support a Program Review which will assess the program's readiness for full production. The following is a schedule of flight testing milestones:

DT/OT-II: 1 Oct 1986-30 June 1988.
DT-III/OT-IIIA: 1 Feb 1988-1 April 1988.
OT-IIIB: 1-30 June 1988.
Program Review: July 1988.
IOC: Sep 1988.

Question. How was the quantity of 19 weapons for FY-87 funding determined?

Answer. Ten (10) weapons are required to complete the Integration and Test (I&T) phase of the program. The remaining nine (9) will provide an initial contingency operational capability at the conclusion of the I&T phase.

LASER MAVERICK

Question. The Navy is requesting $198.8 million for 1,800 Laser Maverick missiles. Fiscal year 1987 marks the fourth year of production for this weapon.

What is the contracted price for the 600 missiles funded in FY 1985? Compare that price with the previously negotiated not-to-exceed (NTE) price.

Answer. The FY 1985 contract is not yet definitized. It is being negotiated by the Air Force with definitization anticipated in May 1986.

Question. Provide the same information for the 1,500 missiles funded in FY 1986.

Answer. The FY 1986 contract has not yet been awarded. The award will occur subsequent to approval for full production, currently anticipated for May 1986.

Question. The negotiated NTE contractor price for 1,800 missiles in FY 1987 was $158.4 million, expressed in FY 1983 constant dollars. What is that price expressed in FY 1987 constant dollars?

Answer. The price in FY 1987 constant dollars is $186.6 million. However, the NTE price no longer applies (see answer to the following question).

Question. What reduction from the NTE price does the Navy expect to negotiate for FY 1987 missiles?

Answer. The NTE price was based on specific quantities of Air Force and Navy Mavericks at Hughes. FY 1987 NTE required joint buy of 6,000 IIR Mavericks. Due to changes in the procurement programs of the IIR Maverick for both Services, the NTEs have been invalidated. The specified annual quantities are below those required in the negotiated agreement.

Question. Why does the budgeted unit price for missile hardware in FY 1987 exceed that for FY 1986? Shouldn't the unit price be going down, particularly for a larger quantity buy?

Answer. Slight quantity increase is not sufficient to offset inflation.

Question. Pertinent to the preceding question, provide details for the record of why unit costs are increasing from FY 1986 to FY 1987 for GC&A and rocket motors.

Answer. The GC&A increased 2.5% with slight quantity increase insufficient to offset escalation. Rocket motor FY 1986 costs were based on early program assumptions. FY 1987 costs were repriced based on more current information.

Question. Why are contractor support costs no longer broken out in the detailed cost sheet included in budget documentation? What are those costs for Laser Maverick in FY 1986? FY 1987?

Answer. Costs no longer broken out due to format change. They are now included in the specific hardware cost elements. This was done to more closely align cost accounting with actual contract structure (i.e. contractor sustaining engineering is not separately priced on contracts). Costs are approximately: FY 1986—$14.6 million: FY 1987—$10.3 million.

Question. The Congress provided $173.5 million for Laser Maverick in FY 1986. Why does the FY 1986 column of the FY 1987 budget show $164.9 million? What happened to $8.6 million?

Answer. The $8.6 million reduction was due to the application of a Congressional undistributed reduction for revised escalation assumption.

ROLLING AIRFRAME MISSILE

Question. The Navy is requesting $63.2 million for an initial procurement of 50 Rolling Airframe Missiles (RAM). A similar request for initial procurement funds in last year's budget was denied by the Congress because of serious technical problems in the development program.

RAM development testing was stopped and then restarted last year. What have been the results of recent flight tests?

Answer. Six RAM firings have been conducted since development testing was stopped. The six are as follows:

3 Instrumented Test Vehicles (ITV) were fired during the period June-December 1985. These missiles were instrumented to obtain inflight environmental data and to verify parameters used in ground testing. ITV-1 flew a ballistic, non-maneuvering trajectory while ITV-2 and ITV-3 flew pre-programmed maneuvers up to levels of 20g's. Valuable data was collected which for the most part verified ground testing. In addition, ground testing has been modified to reflect the actual environments encountered. Also, several reliability improvements were tested.

2 Blast Test Vehicles (BTV) were fired from USS DAVID R. RAY (DD-971) in November 1985. The following were verified.

System operation in shipboard environment;
System interface with TAS/SLQ-32;
Operation of firing circuits and interlocks.

One flight Test Round (FTR) was fired on 22 January 1986 against a BQM 34 target drone. The flight resulted in a direct hit.

Question. Describe planned government flight tests, including a milestone schedule.

Answer. FTR-2 and 3 will be tested by the contractor as soon as they can be assembled. The current test plan calls for up to 18 DT/OT (Development/Operational Tests) before milestone IIIA, scheduled for February 1987. The firings will be divided between shipboard (USS DAVID R. RAY (DD-971)), and land-based at the White Sands Missile Range and San Nicholas Island. An additional 29 missiles DT/OT flight test program will be conducted during 1989-1990 prior to approval for Full Production.

Question. Is the design of the RAM, including major components such as the seeker, mature?

Answer. The functional design of the RAM missile is mature and has been proven in 21 successful guided flight tests (direct hits) during Full Scale Engineering Development. The flight test failures of flight hardware that had been reworked on numerous occasions. The contract has had 20 reliability improvements to the missiles and missile reliability will be demonstrated prior to DNSARC IIA.

Question. Has RAM undergone a Production Readiness Review within the past six months?

If so, what were the results?

If not, when is one planned?

Answer. A Production Readiness Review (PRR) is scheduled to be conducted in December 1986 prior to approval for limited production.

Question. Has the Navy conducted any producibility analyses of RAM within the past year?

Answer. the NAVWPNCEN China Lake and the prime contractor have been conducting producibility analysis on the Guided Missile Round Pack design. Initial producibility study results are due by April 1986.

Question. When is DNSARC IIIA scheduled for RAM?

Answer. The RAM DNSARC IIIA is scheduled for February 1987.

Question. The Navy's acquisition plan for RAM shows the intent to procure 152 missiles prior to TECHEVAL and OPEVAL. How does the Navy justify this acquisition strategy, particularly in a program which has experienced high failure rates in testing thus far?

Answer. The operational requirement of both the U.S. and German Navies require some concurrency in the development and acquisition of RAM. Technical problems have been experienced and have caused the Navy to delay TECHEVAL/OPEVAL until we can test production-representative missiles and command and launch systems. We are seeking a limited production decision (of 152 missiles or 3% of planned total procurement) based on intial operational test and evaluation which commences later this fiscal year. Our testing to date has verified our functional design but has uncovered problem areas in reliability and productibility. Under Government laboratory oversight, the prime contractor has inserted twenty reliability changes into the missiles and has improved his ground test procedures and manufacturing processes. We are now testing missiles configured with the reliability changes which have gone through the modified test process. The Navy believes 3% of the total procurement based on limited production decision is prudent in limiting our risk while meeting our operational requirements.

STINGER

Question. The Navy is requesting $51.9 million to procure 685 STINGER Missiles. The Navy has not previously procured STINGERs, and evidently intends this to be a one-time request.

Why is the Navy requesting STINGER procurement? What is the requirement?

Answer. ———. The balance of funds requested support training (ashore and at-sea) and auxiliary equipment for the STINGER Weapons System. These items include:

Item	Quantity	Amount in millions
Gripstocks	30	0.18
Tracking head trainers	49	5.2
Gas pumping unit	5	.2
Battery chargers	39	.5
Field handling trainers	15	.09
Stinger launch simulators	90	3.43
Stinger training rounds	2,171	5.85
Total		15.45

Question. Must this requirement be met with the relatively sophisticated RMP version of STINGER? Why can't it be met by drawing Basic STINGERs from existing Army or Marine Corps stocks, thereby lowering the cost?

Answer. (U) The anti-terrorist and special warfare arena required a weapon as capable as planned for Army/Marine Corps that is, the RMP version. Further, older (basic) STINGER weapons would not be readily available from the Army/Marine Corps until after they took delivery on the newer RMP version. A proposal to transfer basic STINGERs as they are phased out would leave the

Navy with out-of-production units which would become increasingly more expensive to support/maintain.

Question. Obtain, and supply for the record, the cost of procuring Basic STINGERs for this requirement.

Answer. Based on ——— the cost of $57,200 each for special production, total cost of 685 Basic STINGERs is $39,182,000.

Question. The Army is the procuring agent for STINGER. This year's Army request for flight hardware (i.e., missile, seeker and warhead) results in a unit cost of $43,161. Why is the Navy requesting funds which result in a unit cost of $5,392, a figure 19 percent higher than the Army's?

Answer. The Navy has factored in the cost of a gripstock and metal container for each weapon. An additional 5% has been included to accomplish warhead and rocket motor changes to meet Navy standards for shipboard explosive material. Breakout is missile $43,161, gripstock, $5,392; metal container $683; and changes: $2252.

Question. As you know, the STINGER gripstock is reusable. Why is the Navy requesting as many gripstocks as missiles? What lower number of gripstocks would be sufficient?

Answer. ———. If subsequent procurements result (FY-88 and out), the need for one-to-one system/gripstock will be reevaluated.

MARK-48 TORPEDO

Question. There are ——— Mark-48 torpedoes in the Navy's inventory, and fiscal year 1985 was the last year funds were provided for this torpedo. Has the Navy upgraded all Mark-48 Mod 1 and Mod-3 torpedoes to the Mod-4 configuration since the in-service Mark-48 torpedoes will not be upgraded to the ADCAP configuration? If not, will they all be upgraded, and if so, when will this process be completed, and at what cost?

Answer. New torpedores being delivered from FY83/84/85 buys will be the Mod 4 configuration. ———. During the depot turnaround of warshots Mod 1 and Mod 3 torpedoes are being upgraded to Mod 4 configuration. The material for these upgrades has already been procured. At the conclusion of this upgrade program, in 1990, approximately 200 torpedoes will not have received the Mod 4 conversion. These units will be used for exercises. The cost to complete this effort is negligible since the parts have been procured and the installation will be accomplished in conjunction with scheduled depot maintenance.

[CLERK'S NOTE.—Classified question and answer removed.]

MARK-48 ADCAP

Question. The Navy is developing the Mark-48 Advanced Capability (ADCAP) torpedo to overcome Mark-48 shortcomings and to provide increased performance against projected future threats. During FY 1986, ADCAP will be concurrently in full scale development and limited production. The Navy's FY 1987 budget includes a request for $508.4 million to procure 227 torpedoes.

FY 1987 is the first year of full production for the MK-48 ADCAP Torpedo. However, in the past year this program has experienced problems in the development of both hardware and software. What hardware problems were encountered, and how were they resolved?

Answer. Two primary hardware problems were experienced. The first was delays in the delivery of FSED torpedoes. These delays were due primarily to problems in the circuit card fabrication and assembly process at Hughes Aircraft. This was corrected by Hughes ADCAP manufacturing staff. All FSED torpedoes have now been completed and delivered to the Navy. The second hardware problem was the development of the torpedo Automatic Test Equipment (ATE). ATE is a sophisticated, computer-based suite of maintenance hardware and software which tests and fault-isolates the torpedo and its component sections in order to prepare the weapon for delivery to a submarine. The scope of the effort required in FSED was underestimated. This problem was corrected by application of additional contractor and Navy technical resources. Two ATEs have been completed and delivered to the ADCAP turnaround facility at Naval Weapons Station Charleston, to support TECHEVAL.

Question. Is the combat control system software for ADCAP on schedule and technically mature?

Answer. The combat control system software which will test ADCAP has been delivered. It has performed well in ADCAP testing to date, and is expected to fully support Operational Test IIA in June 1986, Operational Evaluation (OPEVAL), and the scheduled Initial Operational Capability (IOC) date ———.

Question. When will this software program complete Factory Acceptance Testing?

Answer. Factory Acceptance Testing will complete in September 1987.

Question. How many Program Trouble Reports (PTRs) remain outstanding at this time?

Answer. There are 1120 PTRs presently outstanding, none of which should affect ADCAP testing.

Question. Navy TECHEVAL for ADCAP was to begin in January 1986 and is scheduled to be completed this month. Did this occur on schedule? If not, why not, and when will TECHEVAL commence? If so, what have been the results to date? Were there reductions in TECHEVAL Phase I scope?

Answer. Navy TECHEVAL commenced August 1985 and is planned to complete May 1986. TECHEVAL will not complete this month primarily due to delay of Hughes Aircraft in delivering torpedoes fast enough to support the planned firing rates. Delivery problems at Hughes have been corrected. TECHEVAL is greater than 60% complete with the ADCAP torpedo currently meeting or exceeding all the NDCP specifications. No reductions have been made to the scope of TECHEVAL.

Question. What is the current estimated program unit cost of the MK-48 ADCAP?

Answer. Current estimated program unit cost is $1.9M.

Question. What is the current inventory objective?

Answer. Planned procurement quantity ———.

Question. Your budget justification states that 50 of the FY 1987 torpedoes will be used for second source pilot production. Have you selected a second source, and if not, when do you anticipate making a decision?

Answer. Two companies were selected in September 1985 as potential second sources: Raytheon and Gould. Both companies submitted Fixed Price Incentive Proposals in January 1986. Selection is planned for 1 April 1986.

Question. Since your procurement to date have been concurrent with full-scale development, will the torpedoes require modifications due the design changes, and if so, at what cost and who would be responsible for funding the modifications?

Answer. Previous experience with the MK-48 torpedo, as well as other weapon procurements, has shown that engineering changes must be planned and budgeted for in all production lots, but at a higher rate in early pilot lots, Many of these changes are for improved producibility, and result in down stream cost savings rather than net increases. The Navy program office is responsible for approving and funding these changes. For ADCAP, engineering changes have been budgeted at a cost of 10% of the base hardware cost for the first few production contracts, decreasing gradually to 5% and then to 3% for the remaining production lots.

Question. Has approval for full production been granted, and if not, when is it scheduled? How many torpedoes will be funded by that time?

Answer. Approval for full production is scheduled in January 1987, one month after the completion of OPEVAL. A total quantity of 151 torpedoes will be funded by that time (28 in FY85; 123 in FY86).

Question. Have there been any changes to dual sourcing acquisition strategy or funding profile since the Navy testified before the Congress in March 1985?

Answer. The on change to the ADCAP dual sourcing acquisition strategy since last March has been the decision to select two companies vice one for the initial second source familiarization phase. This was done in order to provide a firmer data base for the selection of the ultimate follower for qualification and production. There have been no changes in the key milestones leading to full competition in FY88. There have been no changes in the second source funding profile other than inflation adjustments to reflect reduce escalation indices.

Question. What is the minimum economic production rate, and at what rate does dual sourcing become questionable?

Answer. The minimum economic full production rate is 475 torpedoes/year, split between leader and follower. While competition savings continue to increase at higher production rates, per-unit savings from the competition investment are maximized at this rate. During the initial years of production ramp-up, some savings will occur at rates below 475/year. Based on analysis of the proposals received from both potential followers in January 1986, and independent data obtained from Hughes, the minimum annual procurement from FY88 on (first year of competitive procurement) would be approximately 300 units.

Question. What production rate is necessary to achieve savings associated with dual sourcing:

Answer. Some savings over a sole source acquisition strategy will still occur as long as the rate remains at or above approximately 300/year.

Question. As part of the competition strategy, the Navy stated that in 1987 it plans to compete the ADCAP afterbody and fuel tank. Is this plan on schedule:

Answer. Yes. TRW was selected as the second source supplier for ADCAP propulsion systems and fuel tank. Qualification testing will be complete in time to complete the FY 87 procurement.

Question. The Navy has planned several upgrades to the ADCAP. What is the status of these upgrades?

Answer. Three future upgrades ar currently planned to the ADCAP: ———.

Question. There have been a number of problems during the development stage which have caused delays in the schedule and the releasing of funds. What problems remain and what action is being taken to resolve them prior to full production?

Answer. Development at this point is nearly complete. In-water, homing performance during Navy TECHEVAL has been excellent, meeting or exceeding performance specifications. The only significant remaining problem is that torpedo hardware ———.

Question. Will the new digital combat/fire control system (CCS Mark-1 Program C4), required for the ADCAP, be compatible with the existing Mark-48 in-service fleet inventory, or will those torpedoes be assigned to second-line fleet submarines equipped with the older analog oriented Mark-117 fire control systems?

Answer. Program C4 is designed to support the full complement of submarine weapons, including the present in-service MK-48.

Question. When will the CCS Mark-1 be delivered to the fleet? Will the CCS Mark-1 (Program C4) support the full complement of submarine weapons (including the Mark-48 Mod-8 and ADCAP heavyweight torpedoes, Tomahawk cruise missiles, Harpoon missiles, and the Vertical Launch System (VLS) when it is delivered to support the ADCAP torpedo?

Answer. The CCS MK-1 Mod 0 program was delivered to the fleet in June 1984. The CCS MK-1 Mod 1 (program C4) will IOC ——— will support the full complement of submarine weapons mentioned above.

ANTISURFACE SHIP WARFARE TORPEDO

Question. How much R&D work has been completed to date on this program, and how does that translate into dollars?

Answer. This program has been structured to procure weapons that are based on existing hardware. No research and development has been accomplished within this program nor is any anticipated.

Question. Do you have R&D funds being requested this year?

Answer. No R&D funds are being requested for FY 1987.

Question. Your budget documents state that "FY 1987 (procurement) funding provides for the evaluation of candidate torpedoes (14 units for 2 contractors). . ." What are the candidate torpedoes? Will design changes be necessary, and if so, to what extent?

Answer. The Request for Proposal was issued on 12 March 1986 and proposals are due by 26 May 1986. Two candidate torpedoes will be chosen from those proposals. In order to keep the cost of this torpedo as low as possible, the Navy intends no changes to candidate torpedoes except those that will result in total system cost savings or are necessary to ensure safety.

Question. Describe the differences in capabilities between the anti-surface ship torpedo and the Mark-48 Mod 4? What is the cost delta between the two weapons?

Answer. The specific differences in capabilities between the anti-surface warfare torpedo and the Mark-48 Mod 4 will not be known until receipt of proposals and selection of candidate torpedoes. The unit production cost delta will be approximately $400K.

Question. What is the inventory objective for the low-cost torpedo?

Answer. The Navy intends on procuring 2000 anti-surface warfare torpedoes.

Question. To what degree will operating and support costs be affected in maintaining a diverse heavyweight torpedo inventory?

Answer. The Navy is currently planning to support two heavyweight torpedoes, MK-48 Mod 4 and the MK 48 ADCAP. The addition of an ASUW Torpedo to the inventory will increase operating and support cost. The extent of the increase will not be known until a specific weapon has been selected. One specific selection criteria is minimum operation and maintenance cost.

Question. Have these costs been identified? And, if so, what are the Navy's estimates for manpower, training, and equipment, including the construction of new, expanded and modified IMA's depots, weapon stations, submarine support facilities, and service facilities?

Answer. No. Operating and support costs will vary according to the contractor's proposed maintenance, training, and logistics support requirements. These costs should be minimal since this is intended to be a stockpile reserve torpedo.

MK 46 TORPEDO

Question. Last year, Congress provided funds to procure the MK 46 torpedo under a multiyear contract. Has that contract been awarded, and if not, when do you intend to award it?

Answer. The contract has not yet been awarded. The contract is planned for a June 1986 award.

Question. Your budget documents show a difference of 13.3 percent between FY-85 and FY-86 for MK 46 hardware, and the reason given for this difference is "escalation". How do you explain a 13.3 percent increase and attribute it to escalation, particularly since we are experiencing low inflation rates?

Answer. The FY-83-85 fixed price contract was signed in September 1982. The difference between 1985 and 1986 cost for hardware is actually three years of inflation (1983, 1984 and 1985). A 13.3 percent increase represents a 4.4 percent annual inflation rate.

Question. Last year's request for the MK 46 multiyear procurement represents the second multiyear procurement for this program. To date, how much has been saved when you compare your actual contract costs to your original budget estimates?

Answer. Compared to the original budget estimates, the overall savings from the FY-83-85 multiyear is $154.4M

MK 50 TORPEDO

Question. The MK 50 torpedo is the Navy's new lightweight which is scheduled to gradually replace the MK 46 torpedo. Your budget request represents the first limited production procurement for the MK 50 which is concurrent with full-scale development. How much more funding is required to complete the MK 50 R&D effort?

Answer. The budget reflects a requirement of $228.6M in R&D funds, the majority intended for initiating a production line build. However Gramm-Rudman-Hollings and other reductions of $10.6M to the MK 50 program during FY-86 have occurred since the FY-87 budget submission. This will result in a requirement for additional funding. The exact amount has not been determined at this time, but current estimates are near the "should cost estimate" submitted to the Congress in 1983.

[CLERK'S NOTE.—The Department was asked to verify the $228.6 million figure.]

The Committee has been advised by Navy officials that there is nearly an $18 million funding shortfall in the FY-86 program.

Question. How will this funding problem be resolved?

Answer. The Navy is reprogramming $3.9M into FY-86 and reducing the manloading to absorb the shortfall.

Question. Does this place the program schedule in jeopardy?

Answer. This will cause a schedule delay. However, a new transition to production plan is being initiated which will allow the program to stay within the major milestone thresholds established at Milestone II, and a five month schedule delay is not disruptive.

Question. Is the design and development of both hardware and software for the ALWT mature enough to warrant initial production in FY-87?

Answer. Yes. These weapons sustain the build of production line weapons used for the technical and operational evaluations.

Question. Please summarize the results of in-water tests held thus far. What is the Navy's assessment of technical and schedule risk for the remainder of the FSD program?

Answer. The production prototype torpedoes (200A series) are being delivered on schedule with the first four completing operational test stand, hybrid simulator and environmental testing objectives. The first sea run is imminent. Meanwhile, the fully capable operational software is operating in the Demonstration and Validation torpedo (100s series) sea run program where it now performs better tactically than Torpedo MK 46. A total of 147 sea runs have been conducted to characterize performance of which 117 have achieved the desired information objectives. Starting in October 1985 the runs have been conducted with operationally significant software where 13 of the last 14 runs have been completely successful. The last four shots included a successful hit shot against a U.S. submarine and successful trials against U.S. countermeasures. Given production prototype torpedo (200A) in-water success during CY 1986 equivalent to test stand and sea run success to date, remaining schedule and technical risk is low.

Question. Your budget request calls for the procurement of both the MK 46 and its replacement, the MK 50. Why would you purchase both torpedoes at this time, particularly when your budget documents state the MK 50 ". . . is designed to meet present and forecast threats through the year 2000?"

Answer. MK 46 is in a multiyear economic rate production at Honeywell fulfilling inventory objective requirements. MK 50 will start and then sustain low rate production in the same facility. By the time MK 50 is approved for production in 1989 and begins to ramp up, MK 46 will be winding down. The current plan provides a smooth, economic transition from MK 46 to MK 50 rate production.

Question. Why would it not be more practical to transfer the MK 46 funds to the MK 50 line and purchase only MK 50's?

Answer. The FY-87 MK 50 production start sustains the production line at a low rate while testing these production weapons in TECH/OPEVAL. Thus, it is too soon to ramp up MK 50, and if MK 46 is taken down from its multiyear economic production rate, dollars are lost and overhead costs are increased on the low rate MK 50 line.

Question. Would you not get a better price with a higher quantity?

Answer. During the first two years of initial production, the quantity produced is limited by the evolution of the production line. The program of record reflects the limited quantity that could be produced at this time. Better prices can be achieved based on higher quantities when full rate production can be achieved in FY-90 and these deliveries will coordinate with the completion of MK 46 production.

Question. Provide for the record, the number of MK 50's that could be purchased if funding in the amount of $290M is provided?

Answer. Due to the physical limitations of the production line, it is estimated that no more than 100 torpedoes could be produced at a cost of approximately $150M. The Navy could not effectively spend $290M on production of the MK 50 torpedo.

Question. It is our understanding that the Navy intends to compete or develop a second source for this program.

Is this accurate?

Answer. Yes.

Question. How many contractors have expressed a serious interest in bidding?

Answer. Three contractor teams are preparing proposals at this time.

Question. How do you intend to proceed with second sourcing?

Answer. The second source will be selected competitively by the end of CY-86. A technology transfer program will be conducted during FY-87 and FY-88, with Honeywell as leader, providing a technical data package to the follower to build limited amounts of MK 50 hardware starting at the component level and building up to 10 qualification torpedoes. After qualification, the follower will begin an initial production run of 84 torpedoes. The qualification torpedoes must demonstrate interchangeability and interoperability with Honeywell torpedoes. The delivery of the follower's 84 torpedoes will coincide with his production line readiness to compete for a split of the first full rate production lot in FY-90.

Question. What would be the total cost to establish a second source, and how does that compare to the MK 48 ADCAP second sourcing effort?

Answer. The total estimated cost to establish a second source contractor is approximately $114.5M for 10 qualification torpedoes, production engineering and vendor qualification. Comparable costs for 12 qualification MK 48 ADCAP torpedoes are $116.5M.

Question. What is your inventory objective?

Answer. The inventory objective for the MK 50 has not yet been established.

Question. What quantity represents your breakeven point?

Answer. The breakeven point for the two producers is 800 torpedoes per year.

Question. Does this year's request include funds for a second source, and if not, when do you anticipate requesting those funds?

Answer. The FY-87 WPN request contains $10.1M initiate second source qualification.

VERTICAL LAUNCH ASROC (VLA)

Question. The FY-87 budget includes your first procurement request for Vertical Launch ASROC (VLA). It is our understanding that full scale development will not be completed until March 1989—three years from now.

Is this accurate?

Answer. Yes. The full production decision will not be made until March 1989, after the completion to TECHEVAL and OPEVAL in 1988. The request in the 1987 budget is for the first of two years of limited production required to have missiles for the VLS ships, starting in 1988.

Question. What other components are being competed?

Answer. In addition to the missile, the launcher cells and the canisters (the missile container) will be competed. The only item which will not be competed will be the test equipment for the weapon stations (two in 1987), which will assemble the missiles. The limited number of these sets does not justify competition.

SUBMARINE LAUNCHED MOBILE MINE [SLMM]

Question. Last year Congress deleted all but $3.7 million of the Navy's $23.7 million request for the submarine launched mobile mine, SLMM. This action was based on concerns with both technical problems and delivery slippages in the program. Although last year's plan called for 273 units to be procured in FY 87, your budget cancels the program through 1991. What was the basis for this decision?

Answer. The SLMM procurement program has been halted. The department is examining methods of upgrading SLMM ———. As a consequence, the Navy's inventory objective is being reviewed.

Question. Can we expect any production beyond 1991?

Answer. Production beyond 1991 is not anticipated.

Question. Last year, Navy officials stated that there was a SLMM product improvement program underway. What is the status of the upgrade program, and is it currently being funded? Can we expect to see a request for an improved SLMM, and if so, when would that be?

Answer. The product improvement (upgrade) program consists of replacing the vacuum-tube guidance and control components of the mine's afterbody section with solid state components. Engineering field tests of the upgrade program components were conducted successfully in October 1985 at NUSC Newport RI. We are conducting a Physical Configuration Audit to ensure that the documentation reflects the configuration tested. The verified documentation will be set-aside until a decision is made to continue the upgrade components program. The program is being considered for FY–88.

There are production quantities programmed in the FY 1990 and FY 1991 program years for SLMM upgrades.

MK–15 CLOSE-IN WEAPONS SYSTEM [CIWS]

Question. Last year, Congress provided $150.1 million to procure 39 Mark-15 Close-In Weapons (CIWS) and directed that these funds be used to procure only the upgraded Mark-15 Block I configuration. Have you awarded the FY 1986 contract, and if so, did you follow the Congressional direction?

Answer. The FY-86 Production Contract is for the Block I configuration. It is expected to be signed in April 1986.

Question. The Navy's request for funds in FY 1983 through 1985 were based upon the Block I upgrade. Did you in fact contract for Block I upgrades in those fiscal years, and if not, explain why there are problems obtaining this upgrade?

Answer. The FY-83 through FY-85 contracts were for Block 0 systems. The delay in introduction of Block I resulted from additional testing requirements and design problems that have since been corrected.

Question. How many systems will now have to be upgraded to the Block I configuration, and what is your estimated unit cost for the modification?

Answer. A total of 419 systems are planned for retrofit to the Block I configuration at an estimated $1.06M per ordnance alternation (ORDALT). The schedule below shows the funding profile for the retrofit program.

PHALANX CIWS MODIFICATIONS

[Quantities in parenthesis]

	Fiscal year—	Prior 1986	1987	1988	1989	To complete (block I only)
$19.1 (18)	$43.0 (31)	$54.7 (40)	$86.4 (76)	$105.9 (95)	$82.2 (61)	$103.9 (98)

Note: Funding also includes other modifications and 11G7 trainer updates.

Question. What were the effects of the May 22, 1985 and December 3, 1985 suspensions of GD/Pomona on contracting for production of PHALANZ systems?

Answer. The May 22, 1985 contract moratorium caused a slip in FY 85 production of about 2½ months and an initial Not To

Exceed (NTE) price that was significantly higher than expected. It is anticipated that the definitized price will be slightly higher than previously anticipated. In addition, two systems cannot be procured in FY-1985.

The December 3, 1985 contract suspension did not affect the procurement schedule.

Question: Late last year FMC and Raytheon issued an unsolicited proposal for second sourcing CIWS. What is the status of this proposal, and does the Navy intend to second source CIWS?

a. What is the estimated cost for the effort to establish dual-sourcing for the CIWS?

Are funds included in this year's request?

b. How many CIWS units would need to be produced each year, and how would the quantities be split between leader and follower?

Are the amounts in line with projected outyear requirements for CIWS production?

c. What would be the expected unit cost savings associated with dual sourcing, and how soon could they be realized?

Answer. The Navy is currently evaluating second source options that include a competitive procurement in FY-87 or FY-88.

Estimates of funding required to establish a Second Source are unknown at this juncture and won't be known until proposals from second source bidders are reviewed. FY-86 funds will support second source effort.

Over the next four years an average of 40 systems and 60 Block I ORDALT kits will be procured annually. Current plans are to split procurement ⅔-⅓.

The FMC/Raytheon unsolicited proposal was independently evaluated and the Navy decided to proceed with open competition for second sourcing CIWS vice a directed second source to FMC/Raytheon. Current plans will lead to selection of a qualified CIWS second source in August 1986.

QUICKSTRIKE MINE

Question. This past December, after nearly 15 months, the Navy awarded the FY 1985 contract for the Quickstrike mine that included options for two years. Shortly after Congress provided funds for the FY 1986 procurement, it was decided that the Navy would compete the FY 1986 procurement instead of exercising the current contract options. Could you tell us what was the basis for this decision?

How many times has this program been completed, and to whom was the contract awarded?

Answer: The Navy feels that significant cost savings can be realized in recompeting the FY 86 and FY 87 options for the Quickstrike MK 65 Mine. The FY 86 and FY 87 MK 65 Mines were covered as options under FY 85 acquisition competed by 2-step formal advertisement. All bids submitted under the second step were deemed non-responsive and the acquisition was converted to competitive negotiation. Discussions were held and best and final offers solicited and submitted. A protest against the Navy's plan to award under the rebid was received from Aerojet. The protest requested that award be made on the basis of initial bids. Award was withheld pending the GAO decision on the merits of the protest. GAO subsequently sustained the protest and award was made at the initial bid prices. The rebid prices during the FY 85 acquisition indicate that significant cost savings can be realized by a new competition. The new competition will add options, not included last year, which will buy out the program.

A. The initial contract for development of MK 65 mine cases was completed in 1982 and won by Aerojet. The most recent production contract, awarded in December 1985 to Aerojet is the only other competitively awarded contract for the MK 65. All other contracts for the MK 65 Mine, development and production, were awarded on a sole source basis to Aerojet.

Question. How many more mines must be purchased to complete the inventory objective, and in what time frame will this be accomplished? Will the time frame be the same if a contractor other than the current builder wins the award?

A. If another contractor wins the award, how long will it take before they successfully pass the first article testing and begin production units?

B. If a new contractor wins the competition, will you meet your current fleet delivery requirements?

Answer. The remaining ——— are presently budgeted for procurement in FY 86, FY 87 and FY 88. We estimate that these mines can be delivered from Aerojet in FY 88 and FY 89. If purchased from a new vendor, delivery will take place in FY 89, FY 90, and FY 91.

A. We estimate that it will take a new contractor two years to successfully pass first article tests and begin delivery of production units.

B. ———.

Question. When do you intend to begin the competitive process, and when will a contract award be made?

A. What assurances does the Committee have that it will not take 15 months as it has in the past?

B. We are already nearly half way through the fiscal year, how can you possibly complete the bid-evaluation-award cycle by the end of FY 1986?

Answer. The Navy plans to issue a competitive solicitation in April, 1986 and award prior to the end of the fiscal year; planned award is in the July timeframe.

A. The last solicitation took an inordinate period of time to award because of the two-step formal advertised procedures (which will not be used this time), resolicitation as a negotiated procurement and the delay caused by the protest and our awaiting th GAO decision.

B. Our current plan uses the following schedule leading to contract award for the FY 86 QUICKSTRIKE MK-65 Mine.

Issue RFP—Week of 21 April.
Received Proposals—Week of 2 June.
Complete Evaluation—Week of 30 June.
Contract Award—Week of 14 July.

This schedule assumes that there are no protests during the competition or on the award.

Question. If the current contractor would win the FY 1986 contract award, will there be any gap in production, and if not, does the contractor agree with your observations?

Answer. If we award the FY 1986 contract this summer as planned, we feel there need not be a gap in production. The encumbent can stretch deliveries from the contract signed in December 1985 and provide early deliveries from the new contract to avoid a gap. We have not formally asked the contractor what his production rates would be under this assumption. It would be up to the contractor to determine the most economically attractive method for production as long as contract delivery requirements are met, if he won the FY 86 award.

Question. Have all the problems with Mark-131 battery been resolved?

A. Is testing still scheduled for May 1986?

B. Has the contractor refused to bid further quantities until the battery is acceptable to the Navy?

Answer. Yes.

A. Five lots of batteries have been undergoing discharge tests. One lot has successfully passed. Of the four remaining lots, two will complete testing later this month, one in April and the final lot in May.

B. Last summer Duracell, the subcontractor for the battery, refused to bid during the resolicitation of the FY 85 contract in August 1985. Testing completed to date shows the battery to be acceptable to the Navy. We believe the subcontractor will now bid on new procurements. The battery is included in all of our production contracts.

AIRCRAFT REARMING EQUIPMENT

Question. At present, the inventory of Aircraft Rearming Equipment is insufficient to fully outfit operational aircraft carriers assigned to the Atlantic Fleet. Cross-Decking of this equipment from returning to deploying carriers inhibits depot maintenance of equipment and adds to its deterioration

Under the circumstances, why is the budget request for FY 1987 ($38.8 million) 29 percent lower than FY 1986 ($54.7 million) funding?

Answer. The FY 1987 budget request represents the last major purchase of Aircraft Rearming Equipment needed to alleviate Navy carrier inventory shortages. All planning figures subsequent to the FY 1987 request reflect our scheduled replacement of worn out and obsolescent equipment.

Question. The Navy will have three more carriers in the near future, which will exacerbate this situation even more.

A. What is the Navy doing to correct this situation? When will it be corrected?

B. For the record, what is the Navy's inventory objectives for FY 1987 through FY 1991, and how do they compare with requirements?

Answer. Aircraft Rearming Equipment is available on a relatively short lead time from previously established vendors. The Navy's Aircraft Carrier Rearming Equipment shortfall is now corrected.

The FY 1986 and FY 1987 budget requests reflect replacement of shore station assets which were diverted to fleet units.

The Navy's Aircraft Rearming Equipment inventory objective through the FYDP is to provide, as funding allows, a procurement schedule which keeps on-hand aircraft carrier and air station allowances at 100 percent. The basis for these requirements is derived from the Navy's Weapons Systems Planning Documents and Individual Material readiness lists. These requirements encompass all of the Navy's aircraft carriers, major amphibious support ships, and shore stations.

Question. Is cross-decking a general practice for the carriers?

A. What other equipment is being cross-decked to shortages?

Answer. Cross-decking Aircraft Rearming Equipment from one carrier to another is no longer necessary. The Navy has filled its Afloat Rearming Equipment Requirements.

A. No major rearming equipment is being cross-decked as a matter of routine.

Question. What good is a 600 ship Navy if the equipment is not all there to utilize all the ships?

Answer. Aircraft support funding, which includes Rearming Equipment, has a direct relationship to mission readiness in our battle forces. If the Navy's FYDP is supported, aviation capable ships will be adequately outfitted.

FUNDING GROWTH RATES, OTHER PROCUREMENT, NAVY

Question. Overall the Other Procurement, Navy account has experienced about a 74 percent real growth from FY 1981 to FY 1987 (based on DoD deflator dated 10/29/85 for OPN). On a percentage basis it is the fastest growing appropriation for Navy procurement.

Why has the real growth in OPN increased at a greater rate than other Navy procurement accounts over the last six years?

Answer. There are two major program factors which have contributed to OPN growth since FY 1981. The greatest single portion of this is equipment procured in support of the Navy's Fleet Modernization Program (FMP). Growth since FY 1981 is directly tied to replacement of mechancial, electrical and electronic equipment necessary to eliminate obsolete components or upgrade our warfighting capability. Average ship service lives have lengthened from 26 to 30 years or more in the last decade and there is now a greater number of platforms in service requiring OPN procured hardware support.

The second major program growth area is in the area of conventional ammunition warfighting sustainability. Since FY 1981, funding for naval munition procurement has more than doubled in keeping witha 90-day ship and aircraft war reserve.

Taken in total, Fleet Modernization Program (FMP) funding and war reserve/sustainability increases account for more than seventy five percent of OPN growth since FY 1981.

Question. During the same FY 1981 to FY 1987 period, the Supply Support Equipment budget activity within the Other Procurement, Navy account has experienced a 19.2 percent decline in real growth.

A. What kind of equipment is procured within the Supply Support Equipment budget activity?

B. The FY 1987 budget ($82.2 million) request is larger than FY 1986 funding, but smaller than FY 1985 ($87.7 million). Why is the funding pattern for this activity so radically different from the rest of the account?

Answer. A. Equipment procured in the Supply Support Equipment budget activity includes forklift trucks, pallet trucks, conveyors, storage systems, narrow aisle cranes, software and computer control for material handling systems, uninterrupted power service, highspeed duplicating equipment, electronic cash registers, shop and office support equipment, pollution control equipment, and classified special purpose supply systems.

B. The fiscal year 1986 and 1987 requests reflect decreasing requirements from fiscal year 1985. Requirements have decreased in the forklift truck and special purpose supply system lines. The Navy considers the fiscal year 1987 Supply Support Equipment budget activity funded at an executable level.

Question. Inventory managers for Supply Support Equipment have established 20 percent ashore/zero percent afloat for overaged equipment as inventory goals. Furthermore, they are deeply concerned about the overage status of this equipment, which leads to frequent breakdowns and excessive time for repair.

A. For forklift trucks, the FY 1987 budget results in *overage ashore equipment increasing* from 26 percent in FY 1986 to 39 percent in FY 1987; for overage afloat, the percentage increases from zero percent to 6 percent. Given the concern of your inventory managers, why doesn't the Navy fund this program to improve the age of the inventory in FY 1987?

B. For forklift trucks, the 39 percent ashore/6 percent afloat overage status holds all the way through FY 1991 and only then drops to 20 percent ashore/zero percent afloat, according to the justification books. A similar pattern is indicated for "Other Materials Handling Equipment". Please explain why it is 1992 before movement is made toward improving the overaged status of equipment in these accounts.

Answer. A. Historically, the forklift truck obligation rate has been well below the 75% appropriation goal in the first year of funding availability. The first year obligation rates were 38%, 35%, 40%, and 59% for fiscal years 1982, 1983, 1984 and 1985, respectively. Based on these results, it is apparent that more than increased funding is required to reduce the amount of overage equipment. The Navy is working to improve management of these programs. The current budget request reflects the maximum executable program.

B. The other materials handling equipment line item also reflects poor obligation performance during the first year of funding availability. Although it is fiscal year 1992 before the overage ashore and afloat percentages drop to twenty and zero percent, respectively, for both line items, the budget request reflects the maximum executable program.

WARRANTIES

Question. Congress enacted warranty legislation in the FY 1985 Authorization Act effective January 2, 1985. This law states the military services cannot enter into a contract for a weapon system in mature full scale production unless the prime contractor guarantees in writing that the item will: (1) conform to design/manufacturing requirements, (2) be delivered free from effects, and (3) conform to essential performance requirements.

To date, the Navy has not issued implementing instructions on the use of warranties.

What is the schedule for issuing the Navy instruction?

Answer. The Navy implemented Defense Acquisition Circular (DAC) 84-9 on 2 January 1985 establishing the basic policy. We are in the process of addressing additional details in a SECNAVINST which we expect to issue by 30 Jun 1986.

Question. In the absence of implementing instructions, how is the Navy ensuring in the Other Procurement, Navy accounts that applicable contracts include warranties, and that warranties are being appropriately exercised?

Answer. DAC 84-9 requires warranties be obtained for weapons systems meeting the criteria outlined in Defense Federal Acquisition Supplement (DFARS) Subpart 46.7—Warranties. Navy contracts are reviewed by various officials in the acquisition process. The principal safeguard is the requirement in the Navy Acquisition Regulation Supplement specifying that acquisition plans address the planned use of warranties.

For warranty applicability to other than weapon systems we follow the procedure outlined in the Federal Acquisition Regulation and DFARS Part 46.

Question. What special procedures are you following to take full advantage of warranties on items that need repairing or replacing *at sea?*

Answer. There are several procedures currently in place which enable the Navy to take full advantage of warranties for items that need repairing or replacing at sea. A Quality Deficiency Report (SF 368) is prepared for all quality deficient material received or discovered aboard ship. Block 19 of this form indicates if the item is under warranty. This report goes to the Fleet Material Support Office (FMSO) which forwards it via the appropriate inventory control point (ICP) to the Administrative Contracting Officer (ACO) for those items which have contractual warranties. The ACO will then make financial adjustments to the contract.

When depot level repairables (DLR's), which include the vast majority of items under warranty, are found to be defective, they are returned directly to the appropriate depot for repair or to a central collection point for further transfer to a repair facility. Since the repair depot for most new systems is the manufacturer, the ACO which has cognizance over the contractor's facility will ensure compliance with warranty provisions in the contract. For items shipped to a central collection point which appear to be under warranty, the appropriate ICP is notified. If the item is under warranty, the ICP will advise the ACO who can then ensure compliance with warranty provisions in the contract.

Question. The Secretary of the Navy stated during April 1985 hearings that the Navy will not pay extra for a warranty. Other procurement program managers, on the other hand, indicate that costs can be indirectly associated with a warranty.

A. What system, if any, has the Navy established to track the costs and benefits of warranties?

B. What incremental costs do you estimate are associated with warranties in the Other Procurement, Navy accounts?

Answer. A. It is Navy policy that contracts will provide warranties for systems they produce at no additional cost to the Navy. We are ensuring that contractors stand by their products. We have paid for reliability in the development and production contracts. It is not considered appropriate to pay anything more, and a system to track costs is not appropriate.

B. There are no incremental costs associated with warranties. Since procedures which were already in existence are being used to monitor warranty compliance, there are no administrative costs.

FLEET MOORINGS

Question. The Navy justification books indicate there is a $13.0 million funding deficit for this account which is spread over a three year period beginning in FY 1986—and that if maintenance is further delayed, "over 40 percent of active moorings will be unsafe for use at their designed holding capacity." What is the reason for the inventory of buoys, heavy chain, and ships anchors getting into this critical situation? Aren't these historically fairly routine, common items in the Navy inventory?

Answer. Available funding has been utilized for procurement of buoys, chain, and anchors to upgrade or maintain existing mooring systems, and has not provided for procurement of material to increase inventory. Although these are fairly routine, common items for the Navy, fleet moorings deteriorate with time. With the exception of the new, high strength chain assemblies which are being stored pending installation, currently stored mooring material has been in existence since World War II and is in unsatisfactory condition for further fleet use.

Question. Navy representatives claim that the entire inventory of fleet moorings equipment is in use, with no surplus. Committee Survey and Investigations staff, however, indicate that substantial quantities of new, reconditioned, and salvaged chain is stored at the Navy Public Works Center San Diego, together with large numbers of anchors and several buoys. Furthermore, the anchors never need replacement due to degradation, and the chains and buoys are routinely reconditioned. An inventory of these items was not available.

A. Does the Navy routinely maintain an inventory of fleet mooring equipment including that which is in use, that which is undergoing maintenance, and that which is in storage? If not, please explain why not, since the FY 1986–FY 1988 budget requests are based on a presumed critical shortage of these materials.

B. If inventories are maintained, provide for the record the number of installations by geographic area, and the inventory of each type of equipment for FY 1986, and the projected inventories for each year through FY 1991.

C. Provide for the record the inventory objective for buoys, anchors, and chain for the period FY 1987-FY 1991.

D. Provide also for the record the quantity and dollar value of procurements for buoys, anchors, and chain necessary to obtain the five year inventory objective and the same information for the budget plan from FY 1987 through FY 1991.

Answer. A. The Navy maintains an inventory of fleet mooring equipment. Each field activity operating and maintaining fleet moorings and fleet mooring materials provides an annual inventory of mooring materials on hand and their condition.

The new chain that was observed at Public Works Center (PWC). San Diego is the high strength chain that has been procured to upgrade currently installed fleet moorings in the FY 1986-FY 1987 timeframe. The old chain is in poor condition and is being retained for emergency use only.

There are a large number of anchors in storage at PWC San Diego. However, these anchors are the stockless anchor designed in the 1930s. After the war, when ships were mothballed on the west coast, their anchors were removed and shipped to San Diego. Although this type of anchor has been used in some fleet mooring designs in the past, new lighter weight anchors have been designed which provide much greater holding power and lower risk of failure (increased safety factor). Eighty-five stored anchors are too small to be used anymore. They are being retained until an economical way of disposal is developed. The remaining anchors will be installed to upgrade currently installed fleet moorings in the FY 1986-FY 1987 timeframe.

The old steel buoys seen at PWC San Diego are no longer used for mooring systems. They require maintenance every three to five years. This is not as cost effective as procuring urethane coated foam filled buoys which can be left in the water for extended periods of time. The old buoys are remaining on site until an economical way of disposal is developed.

The FY 1986–FY 1988 budget requests are based on scheduled replacement of current mooring equipment and installation of new mooring equipment.

B. The number of installations by geographic area is provided below.

Fleet mooring assemblies:	
Pacific	200
Atlantic	38

Fleet mooring assemblies consist of one buoy and various quantities of anchors and chain assemblies.

The inventory of equipment stored at three shore activities, PWC San Diego, PWC Subic, and Construction Battalion Center Gulfport follows:

	San Diego	Subic	Gulfport
Old chain assemblies	86	0	102
High strength chain assemblies	798	0	164
Anchors	161	33	24
Buoys	45	14	30

The projected inventories from FY 1987–FY 1991 follows:

	Fiscal year—		
	1987	1988	1989
Fleet mooring assemblies (installed)	238	238	238
Old chain assemblies (shore)	188	188	188
High strength chain assemblies (shore)	170	0	0
Anchors (shore)	122	85	85
Buoys (shore)	89	89	89

	Fiscal year—	
	1990	1991
Fleet mooring assemblies (installed)	282	324
Old chain assemblies (shore)	188	188
High strength chain assemblies (shore)	0	0
Anchors (shore)	85	85
Buoys (shore)	89	89

The old equipment remains stored at shore activities until an economical means of disposal is identified, and will not apply against inventory requirements. New equipment is stored at shore activities until it can be installed.

C. The inventory objective does not separate buoys, anchors, and chains. Rather, the inventory objective, shown below, is based on the number of buoy, anchor, and chain assemblies required. Fleet mooring assemblies consist of one buoy and various quantities of anchors and chains.

Fleet mooring assemblies

Fiscal year:	
1987	238
1988	242
1989	246
1990	331
1991	416

D. The charts below provide quantity and dollar value of procurements required to meet fleet mooring program objectives. The buoys, anchors, and chain procured will replace existing installed fleet moorings or be installed as new fleet moorings. Procurement funds are budgeted approximately two fiscal years prior to installation. Costs vary for each component since buoys, anchors, and chains are procured in several sizes.

PROCUREMENTS REQUIRED TO OBTAIN OBJECTIVES

[Quantities with dollar amounts in millions]

Buoys	40	$1.150	128	$3.840	75	$2.344	36	$1.170	20	$0.675
Anchors	13	.179	384	5.529	225	3.375	108	1.684	60	.972

PROCUREMENTS REQUIRED TO OBTAIN OBJECTIVES—Continued

[Quantities with dollar amounts in millions]

Chain										
Assemblies	996	3.202	4,003	18.010	2,983	15.504	1,436	7.154	1,073	6.140
Total		4.531		27.379		21.223		10.008		7.787

The quantity and dollar value of procurements in the budget is as follows:

[Quantities with dollar amounts in millions]

Buoys	40	$1.150	76	$2.280	65	$2.031
Anchors	13	.179	40	.570	195	2.925
Chain						
Assemblies	996	3.131	2,241	9.567	2,373	12.176
Total		4.460		12.417		17.132

[Quantities with dollar amounts in million]

Buoys	98	$3.185	20	$0.675
Anchors	294	4.586	60	.972
Chain				
Assemblies	3,808	19.723	1,073	6.140
Planned				
Mooring				
System		.630		20.990
Total		28.124		28.777

MINESWEEPING CABLES

Question. The Navy estimates that $8 million was spent on 60 Q-3 and S-3 replacement magnetic minesweeping cable units. Of the 60 procured, 11 have been scrapped, 31 are in storage, and the remainder deployed. Only one of the new cables has proved usable, and that was reworked by the manufacturer. The problem is inadequacy of specifications, and the manufacturer has not been held liable.

A. Does the Navy have a solution to the problems encounterd with the magnetic minesweeping cables, Types Q-3 and S-3?

B. Will Navy develop new cables or remanufacture the 60 cables already procured?

C. Will the new cables be comparable in durability and operability as those acquired prior to 1979?

Answer. A. The Navy has initiated a short term solution to the problems encountered with the type Q3 and S3 cable assemblies procured since 1979. This involves increasing cable insulation thickness to prevent breakage. Testing is currently underway to verify the short term solution.

B. We will do both in that we will remanufacture existing cables to accommodate the short term solution to the problems and develop new cables to accommodate the long term solution to the problems.

C. Yes. The new long term cables will be more durable and will have the same or better operation capabilities as cable procured prior to 1979.

Question. Why is a repair pipeline required for these cables, when two units are assigned to each minesweeper, and the minesweeper itself deploys with only one cable assembly?

A. How can ships of opportunity use this equipment given its size and the requirement that minesweeping vessels be constructed of wood and/or fiberglass?

Answer. Minesweeping cables are depot level repairable items. The Navy's cable inventory reflects not only items in service, but also those in rework. Since rework is beyond the scope of our intermediate maintenance activities and depot repair facilities are not readily collocated with fleet homeports, a turnaround pipeline is a matter of necessity.

A. The cables we are talking about are Q3 and S3 types and are not designed for use on ships of opportunity because of their high power requirement. Magnetic minesweeping systems for ships of opportunity would more likely use Q1 and S2 cables. The construction of the ship has no direct relationship to the magnetic minesweeping system.

Question. A. What is the inventory for each type and what is the source of funding from FY 1987 through FY 1991? What is the total inventory by type?

B. What is the projected unit cost for development and acquisition of improved Q-3 and S-3 cables?

C. What is the status of funds appropriated for this purpose in FY 1984, FY 1985 and FY 1986?

Answer. A. The Navy's inventory objective is 60 ready service cable assemblies of each type (Q-3 and S-3). All of these will be funded within the OPN appropriation. Funding for each type of cable between FY 1987 and FY 1991 is as follows:

[In hundreds of dollars]

Cable type	Fiscal year—				
	1987	1988	1989	1990	1991
Q3	588	578	604	624	624
S3	159	219	228	236	236
Total	717	797	832	860	860

The total inventory of ready and repairable minesweeping cables on hand is as follows:

Cable type Q3:	
Material condition:	
Ready for use	14

Not ready/in repair	26
Irreparable	6
Cable Type S3:	
Ready for use	48
Not ready/in repair	23
Irreparable	11

B. Projected FY 1988 cable development costs are $850K. Anticipated FY 1988 acquisition costs are $100K per Q3 cable and $50K per S3 unit.

C. There are no FY 1984–FY 1986 OPN funds *specifically* earmarked to solve cable reliability problems.

Small adjustments within the line item have been made to incorporate interim reliability improvements in existing minesweeping designs.

AIRBORNE EXPENDABLE COUNTERMEASURES

Question. The Committee understands that inventory levels for Airborne Expendable Countermeasures are at times inadequate to meet requirements.

A. Did the Navy underestimate its need for Airborne Expendable Countermeasures in FY 1985 and prior years and, as a result, request a large funding increase in FY 1986?

Answer. At times, changing requirements and usage rates for training will cause requirements to exceed inventory levels. When this occurs, the Navy reevaluates priorities and accommodates the fluctuating requirements within funding constraints. The major increase in FY 1986 over FY 1985 is the first year procurement of AIRBOC chaff ($24,753), not a result of underestimating inventory requirements. The requirement for AIRBOC is based upon a need for a near term low cost counter-targeting capability which can be procured in large quantities and expended from SH-2, SH-3 and S-3 aircraft. Its mission will be to counter search, acquisition, and targeting radars.

Question: Air launched chaff containers and infrared flares, which are used to confuse enemy radar and provide false targets for heat seeking missiles apparently were among the items in short supply.

A. Wouldn't a shortage of this equipment make Navy tactical aircraft more vulnerable to attack?

B. Has the Navy used reprogrammings to alleviate this problem?

Answer: A. Shortages of any of the items procured in this program would have a direct bearing on aircraft survivability.

B. In the past the Navy has been able to meet near term shortfalls via fund realignment within this P-1 line. Items procured in this program are included in Mobilization Base planning which allows for a substantial surge in production to meet anticipated requirements during war time.

Question: Funding for this line item is very erratic:

Fiscal year:	*In millions*
1985	$36.3
1986	67.6
1987	40.9
1988	79.8

A. Given the fact that both funding and inventories appear to be very erratic, has the Navy reviewed its method for determining requirements for this program? If not, why not?

B. Please describe in detail *for the record* exactly what the Navy does now to establish requirements for this line item.

Answer: A. Introduction of AIRBOC chaff ($24,753) in FY 1986 and the GENEX expendable electronic jammer ($45,656) in FY 1988 are the reasons for the increased funding requests in these years.

The Navy has developed an Electronic Warfare Methodology for the prediction of combat requirements. This model is an integral part of the Non-Nuclear Ordnance Requirements (NNOR) Study. This model is periodically refined and updated.

B. The increasing reliance on the use of self-protection expendables, such as radio frequency decoys, chaff and flares, for the survivability of Navy and Marine Corps aircraft in a hostile environment has led to the requirement for a methodology for the prediction of combat requirements for such expendables. The Navy has developed models using working groups to assess scenarios for augmentation into computers that determine the usage rate of expendable countermeasures by Navy and Marine Corps aircraft for self-protection. A computer model, called Aircraft Expendable Requirements (AER), was developed at the United States Navy Post Graduate School for the Naval Air Development Center (NADC), Warminster to take into account the Navy and Marine Corps aircraft flight profiles and threat characteristics which play an important role in determining the usage rates. A miscellaneous Requirements Generator model then uses the AER output of average expenditure per sortie combined with an estimated sortie rate to calculate total estimates of airborne expendable countermeasures combat requirements. This process, developed by NADC is called the NADC Electronic Warfare (EW) methodology. The NADC EW methodology's expenditure per sortie values are determined by AER for certain chaff, flare and decoy expendables and manually for other expendables such as the lamps for various infrared countermeasures. These requirements account for a large percentage of the total Navy and Marine Corps airborne expendable requirements.

SPARES AND REPAIR PARTS

Question. According to officials in the Office of the Secretary of Defense (Comptroller), as of March 3, 1986, $204 million of the Navy's $260 million fiscal year 1986 Other Procurement, Navy spares and repair parts funds are being withheld from obligation until all FY 1984 and FY 1985 funds are obligated.

This account has three year money. The FY 1984 and FY 1985 obligation rates are tracking favorably with the obligation rate of the FY 1983 funds, which ended up with a lapsing balance of 0.9 percent, which was within the 1 percent lapse balance established by the DoD as the criterion of an acceptable lapse rate.

A. Are you still in the situation in which you are unable to obligate FY 1986 funds for spares and repair parts until all the FY 1984 and FY 1985 funds have been obligated?

B. The Department policy is to obligate at least 99 percent of the appropriated funds for this account, and you apparently are on track with that obligation rate. Yet, the Department says unsatisfactory obligation rates are the cause of the freeze. How much better than 99 percent could you do?

Answer. A. Not entirely. OSD has released $56 million in FY 1986 funds for spares on approximately 23% of the appropriated amount. It is our understanding that the documentation to release the remaining funds is currently in process.

B. The Navy cannot do better than obligate 99 percent of spares and repair parts funds.

Question. According to the OSD, the Navy can request the release of FY 1986 funds if an urgent need exists.

A. These funds are critical for the fleet modernization program and readiness in general. As of March 3, 1986, you had not exercised the option to request release of these funds. Is that still the situation? If so, why?

B. Have you assessed the impact of this obligation freeze on spares and repair parts on the inventories? If so, what are the results? If not, why not, given the importance of this account?

Answer. A. The Navy did provide data to OSD as justification for release of funding. This included an FY 1986 obligation plan. OSD is currently processing the paperwork to release these funds.

B. No impact is expected if a portion of the funds are released by the beginning of the third quarter, and all the funds by the beginning of the fourth quarter. Although the resources are required in FY 1986, and would result in a significant readiness loss if not received, it is not necessary to receive all the funds at the start of the fiscal year. The obligation plan provided in response to question #109 reflects this execution pattern.

Question. As of January 31, 1986, only 6.6 percent of the FY 1986 funds had been obligated for spares and repair parts. In FY 1987, the request is for $323 million, a 25 percent increase over FY 1986 funding.

A. How can the 25 percent increase for FY 1987 be justified if FY 1986 funds are being withheld from obligation?

Answer. A. The FY 1986 and FY 1987 requirements for spares and repair parts are tied to specific separate end-item procurements and outfittings. During the budget formulation process, this program was reduced to its current funding level to reflect an executable program. This was based on prior year obligation rates. When OSD releases the funds, the FY 1986 program will be obligated as scheduled, and the FY 1987 program can be executed as planned.

Question. Given the fact that FY 1986 funds are being withheld, together with the 25 percent increase for FY 1987, you are building a rather significant "bubble" of funds that must be obligated.

A. What special management plans are you making to assure that these funds could be obligated in a prudent manner?

B. In order to hit the over 99 percent obligation rate, FY 1983 funds were obligated at over 65 percent the first year and over 90 percent in the second year. What is your obligation plan now by quarter to achieve the 99 percent obligation rate for both FY 1986 and FY 1987?

Answer. A. The Navy moved funding for spares and repair parts to a single budget activity commencing in FY 1986. Funding all spares and repair parts procurement in a single budget activity provides higher execution visibility for management control. In addition we have initiated a reduction in the use of undefinitized contractual actions as in basic ordering agreements.

B. The FY 1986 obligation plan is provided below:

Fiscal year 1986 spares and repair parts funding obligation plan by quarter

	Percent
1986, first year of funding:	
First quarter	
Second quarter	11
Third quarter [1]	35
Fourth quarter [1]	85
1987, second year of funding:	
First quarter	87
Second quarter	89
Third quarter [1]	91
Fourth quarter [1]	92

[1] This plan assumes that OSD releases the funds necessary to meet this plan.

Question. According to Other Procurement, Navy program managers, there are several major reasons for lapsing balances: (1) To what extent does each of these apply to the obligation rate problem for spares and repair parts, and (2) what can be done in each case to improve performance?

A. Funding associated with procurement letter contracts is sometimes deobligated, thereby releasing obligated funds after the appropriation lapses.

B. Procurement contracts are often negotiated for less than budgeted amounts, resulting in funds becoming available too late in the fiscal year for reprogramming action to occur.

C. Field procurement activities return unused funds too late in the fiscal year for reprogramming.

D. Delays caused by legal problems, award protests, lack of approval for full production, and contract negotiations may cause procurement to slip beyond the time that funds are available for obligation.

Answer. The Navy has not historically had a spares and repair parts obligation rate problem.

A. Deobligation of procurement letter contracts has had little impact on spares and repair parts obligations.

B. Procurement contracts are often negotiated for less than budgeted amounts. However, this does not impact the obligation rate for spares and repair parts funds since these funds are available for reprogramming for other spare parts requirements.

C. Return of unused funds from field procurement activities has little impact on the spares and repair parts obligation problem.

D. Delays caused by legal problems, award protests, lack of approval for full production, and contract negotiations do not cause procurement of spares and repair parts to slip beyond the time funds are available for obligation.

[CLERK'S NOTE.—End of questions submitted for the record.]

Mr. CHAPPELL. The committee will stand adjourned until 10:00 o'clock tomorrow.

WEDNESDAY, APRIL 23, 1986.

MARINE CORPS PROCUREMENT

WITNESSES

LIEUTENANT GENERAL J. J. WENT, U.S. MARINE CORPS, DEPUTY CHIEF OF STAFF FOR INSTALLATIONS AND LOGISTICS

R. G. GARANT, DIRECTOR, INVESTMENT AND DEVELOPMENT DIVISION, OFFICE OF BUDGET AND REPORTS, DEPARTMENT OF THE NAVY

E. T. COMSTOCK, FISCAL DIRECTOR OF THE MARINE CORPS

OPENING STATEMENT

Mr. CHAPPELL. The Committee will come to order. This afternoon the Committee will consider the Procurement, Marine Corps budget. This appropriation funds a wide assortment of hardware including ammunition, weapons and tracked combat vehicles, missiles, electronic and telecommunications equipment, and other support equipment.

The fiscal year 1987 budget for Procurement, Marine Corps is $1,565,000,000, a $14.4 million decrease from the $1,579,388,000 available in fiscal year 1986 after the Gramm-Rudman-Hollings sequestration. The projection for fiscal year 1988 is $1,909,100,000.

The principal witness is Lieutenant General Joseph J. Went, Deputy Chief of Staff for Installations and Logistics. He is accompanied by supporting witnesses from the Marine Corps and the Department of the Navy.

General Went, your statement will be included in the record at this point in its entirety. You may summarize it, and then we will proceed to questions.

[The statement of General Went follows:]

PREPARED STATEMENT OF LIEUTENANT GENERAL JOSEPH J. WENT
DEPUTY CHIEF OF STAFF FOR INSTALLATIONS AND LOGISTICS

FY 1987 PROCUREMENT, MARINE CORPS

I. INTRODUCTION

Mr. Chairman, distinguished members of the Committee, it is indeed a pleasure to appear before you and present the Marine Corps FY 1987 Procurement Budget request. This year our request totals $1.6 billion.

As you are well aware, the world we live in is threatened by continuous political and economic uncertainty. International relationships are often characterized by tensions which go beyond the ability of any one country to control. These tensions will be further increased by competition for limited resources, expansion of state-sponsored terrorism, political instability of emerging third world countries, violent revolutionary movements, proliferation of sophisticated weaponry, and continued Soviet military expansionism and sponsorship of antidemocratic insurgent movements.

The implications for U. S. forces are clear. Our military force levels must be adequate to deter or, if need be, confront a wide range of challenges from terrorism to full scale conventional warfare anywhere in the world. Major ingredients of this strategy include rapid deployability and forward-deployed forces.

Since the beginning of the decade, Congress and the Administration have made great strides toward improving our national defense. As a result, we have been able to mold the Marine Corps into an effective modern fighting force, ever ready, and poised to be responsive to our country's defensive needs.

II. GOALS OF THIS BUDGET

The Marine Corps' procurement budget has one overall goal: readiness for combat. This year we continue to focus on providing the finest weapons for regular and reserve forces while at the same time maintaining our present high level of equipment readiness and sustainability.

Specifically, we are continuing with programs which are well underway such as ammunition sustainability, missile procurement, the M16A2 rifle, and other vital basic programs. We will complete some programs such as the M198 Howitzer, selected vehicle mounted radios, the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), and the 5-Ton Truck Retrofit Program. New starts have been kept to a minimum, but one significant program is the product improvement to our assault amphibious vehicle.

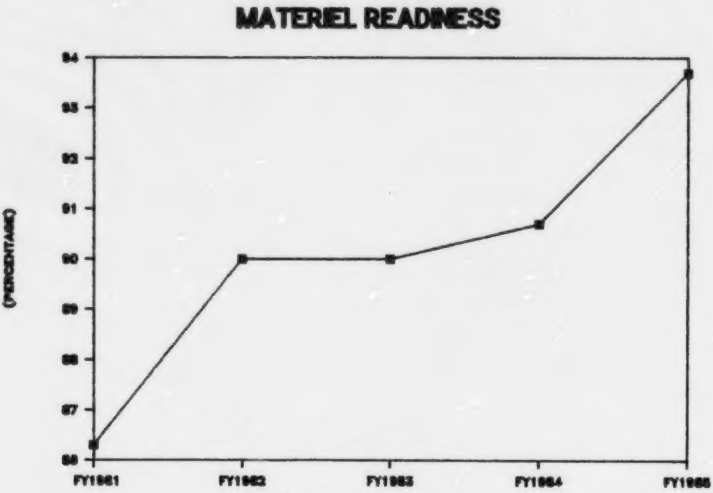
Our midterm goal, extending through FY 1989, is to attain or exceed the Department of Defense goals for principal end items, secondary items, missiles, and ammunition. At the end of FY 1987, we will fully meet the goal for ammunition. However, I must point out that none of the program attainments in this statement have been adjusted for any effects of the Balanced Budget and Emergency Deficiency Control Act of 1985.

III. STEWARDSHIP OF RESOURCES

Readiness, for the Marine Corps, is perhaps the most important aspect of military capability. As the "first to fight," no matter what else, we must be ready now. There are many elements which contribute to the overall term "readiness." In this discussion, I will focus on materiel readiness as that subelement of readiness which is directly affected by procurement.

Materiel readiness consists of two fundamental components: the inventories of equipment and supplies on-hand relative to wartime requirements, and the condition and ability of our hardware to perform its mission. We track our materiel readiness by focusing on 265 principal end items that range from tanks and assault amphibious vehicles to engineer equipment and shelters.

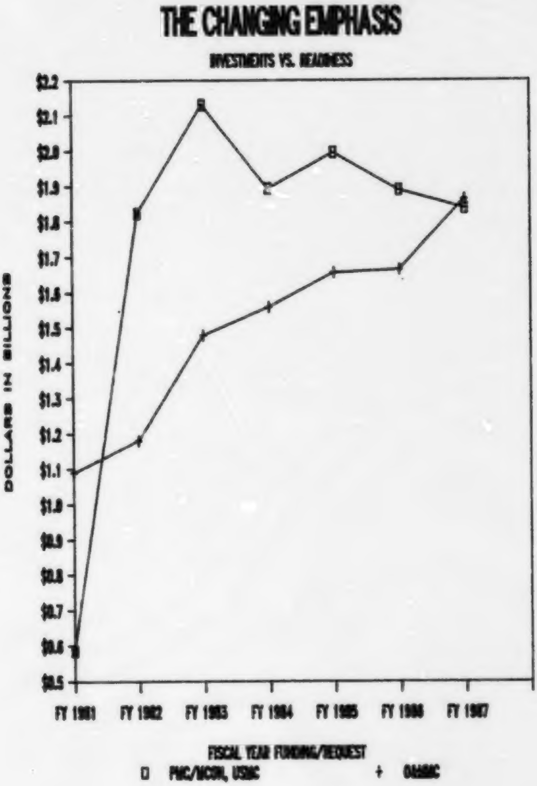
In FY 1981, our materiel readiness was a relatively low 86.3 percent. Over the past few years, we have made significant progress in improving this percentage. In FY 1985, we reached an all time high of 93.7 percent. The graph below portrays this:



Before getting into the details of our procurement budget, I would like to discuss the historical relationship of our Operation and Maintenance, Marine Corps (O&MMC) account to our procurement account. Maximizing military capability with a given level of resources is not a simple matter. For example, military capability is not improved over time if we merely put our resources into new weapon systems but don't have Marines to operate them properly or funds to maintain them adequately. It therefore follows that a primary objective of the Marine Corps is to achieve the best balance among all components of military capability with the resources allocated.

In the first half of this decade, the Marine Corps procurement budget substantially exceeded O&MMC funding. Our military construction programs were also expanded significantly. The weapons systems, equipment, and facilities obtained during this period are now coming on line and must be effectively operated and supported. Consequently, we have had to scale back our PMC account. Completion of certain major programs in Fiscal Years 1985 and 1986, such as the Light Armored Vehicle and Assault Amphibious Vehicle programs, has also reduced our procurement profile.

The graph below depicts the relationship we have currently structured between our investment and operation and maintenance appropriations.



IV. DISCUSSION BY BUDGET ACTIVITY

AMMUNITION

Approximately 39 percent of our FY 1987 budget is dedicated to the procurement of ammunition. In 1980, we had only 19 days worth of ammunition. As noted above, we expect to meet the DOD goal for ammunition at the end of the FY 1987 funded delivery period. This year our significant procurements include 155mm howitzer and 81mm mortar ammunition.

The Marine Corps gives top priority to the training of personnel. Availability of ammunition is essential to support this readiness training. Prior to 1982, due to depressed funding levels, the Marine Corps consumed more ammunition annually in training than it procured. We were forced to reduce our sustainability in order to maintain readiness. With your support, we have been able to reverse this trend over the last few years. This year approximately 18 percent of our budget is allocated for the purchase of training ammunition. This will allow the Marine Corps to meet all objectives for annual rifle and pistol qualification/requalification requirements and live-fire training exercises involving the full range of crew served weapons and artillery.

WEAPONS AND COMBAT VEHICLES

In FY 1985, we completed the Assault Amphibious Vehicle 7A1 (AAV7A1) Production and Service Life Extension Program (SLEP). The AAV7A1 (SLEP) program featured a new engine, transmission, secure voice communication system, an improved fire suppression system, and enhanced the vehicle's watertightness. Since we will not have a replacement vehicle until approximately the year 2000, we must continuously seek ways of improving the AAV to take advantage of emerging technologies. Accordingly, we will start a Product Improvement Program (PIP) in FY 1987. The PIP will improve battlefield survivability of the vehicle with the addition of applique armor. Maneuverability and waterborne safety will be enhanced by the addition of a bow flap. Firepower will be increased by replacing the current weapons station with a new .50 caliber machine gun and a MK-19 grenade launcher.

In FY 1987, we will also initiate the procurement of the improved 81mm Medium Range Extended Mortar. This mortar provides increased range, rate of fire, lethality, and portability over the present 81mm mortar.

The M16A2 rifle program continues in FY 1987. This weapon is a product improved M16A1 with adjustable rear sights, stronger barrel, 3-round burst capability, and improved handguards.

Other weapons being continued include the 9mm Personal Defense Weapon, the Squad Automatic Weapon (SAW), the MK-19 40mm Machine Gun, and the M198 Howitzer. We complete the M198 Howitzer program in FY 1987.

The 9mm Personal Defense Weapon is the replacement for the .45 and .38 caliber pistols. The SAW is a lightweight, 5.56mm individual automatic weapon. It can use either a 200-linked-round magazine or the standard 30-round magazine. The MK-19 fires linked, armor-piercing 40mm grenades which will help counter the growing number of infantry fighting vehicles possessed by potential adversaries.

In FY 1986, the Congress deleted SAW procurements for FY 1985 and 1986. However, the Senate Appropriations Committee Report stated that a reprogramming request for additional SAWs would be considered, if necessary. The timely fielding of the SAW is extremely important because it is the sole remaining automatic fire individual weapon in the Marine Corps. The automatic M16A1 rifles are being replaced by M16A2s which, as I stated earlier, only have a 3-round burst capability. In this regard, we plan to buy 2,559 SAWs for $5.9 million from the $30.0 million appropriated for the Marine Corps Reserve in FY 1986. This procurement will satisfy the entire Reserve requirement. Therefore, no reprogramming request will be required in FY 1986. The remainder of our SAW program will continue through FY 1989 as planned.

During the past 3 years, the Marine Corps has thoroughly analyzed its armor capability. An intensive study was conducted; the results confirmed the urgent need to replace the aging M60A1 with the M1A1 and to restructure Marine tank units accordingly. In late 1984 a System Acquisition Review was held, and in February 1985 the Commandant of the Marine Corps approved the decision to replace the current 716 M60A1s with 560 M1A1s beginning in 1990. This will require a FY 1988 start for long lead items.

MISSILES

Our capability to engage the threat, both air and ground, has increased significantly over the past few years. In FY 1980, we could adequately support only one of the three active Marine Amphibious Forces (MAFs) with HAWK missiles. We had insufficient quantities of basic TOW missiles to counter enemy armor. We were just starting to replace the obsolete REDEYE missile system with the more accurate and significantly improved STINGER. Beginning in FY 1982, this disturbing trend was reversed. With our FY 1987 request, we will almost triple our HAWK assets, increase the number of TOW missiles by approximately 50 percent, and more than quadruple our STINGER attainment compared with FY 1982 levels. However, we still have a way to go before we attain our acquisition objective for these missiles.

COMMUNICATIONS AND ELECTRONICS EQUIPMENT

To be truly successful in combat, we know that the Marine Corps Air-Ground Task Force (MAGTF) commander must have complete control over all ground combat, aviation, and logistics elements of the task force. Accordingly, the Marine Corps has been modernizing communications and electronics equipment by replacing 20-year-old vacuum tube radios with smaller, lighter, and more reliable solid state radios. We have replaced the AN/PRC-47 Radio Set with the AN/PRC-104, a lightweight man-pack high frequency transceiver with a range of 10 miles. We have procured vehicle mounted radios such as the AN/MRC-138 and AN/GRC-193, which are high frequency transceivers and provide long range transmission capability. These radios replace the AN/MRC-83A, AN/MRC-87A, and AN/TRC-75. We have also procured the AN/PRC-113 portable UHF radio and the AN/VRC-83 vehicular mounted UHF radio to replace the AN/PRC-75A and AN/VRC-85 respectively. These radios will greatly enhance control of aircraft during close air support operations. The AN/TPS-59 Radar, fielded to Marine Air Control Squadrons in July 1985, started two months ahead of schedule and will be completed in May 1986. Favorable performance reports have been received from using units, and minimal problems have been experienced in bringing the radar "on-line."

Our major FY 1987 acquisitions of communications and electronic equipment that support the command and control function include the Unit Level Circuit Switch (ULCS), the Digital Communications Terminal (DCT), the Mobile Electronic Warfare Support System (MEWSS), and the Tactical Air Operations Module (TAOM).

The Unit Level Circuit Switch (ULCS) is a family of joint service, tactical, and automatic switching equipment that for the first time will provide secure telephone communications to the MAGTF. This system will form the backbone of the Marine Corps' tactical common user telephone system and at the same time provide for interoperability with other Services.

The Congress, during its deliberations on the FY 1986 Appropriations Act, deleted the FY 1985 Life Cycle Support (LCS) funds and reduced FY 1986 ULCS funding by one-third, to $12.6 million. In the Appropriations language, the Marine Corps was permitted to procure SB-3865s but was only allowed to proceed with four First Article AN/TTC-42s. The language further stated that no further funding of production AN/TTC-42s should be permitted until the results of that First Article Test were known. This language would have the effect of delaying procurement of urgently needed 150-line switches until FY 1990. The Marine Corps has revised its competitive Request for Proposal (RFP) to satisfy the FY 1986 Appropriations Act and intends to award a production contract in FY 1986 for SB-3865s and four First Article Test AN/TTC-42s.

Due to the urgent operational requirement for 150-line switches, as well as the significant savings to the government because of the existing competitive situation, a delay of four years in procuring the 150-line switches is viewed as unduly restrictive. The Marine Corps will work closely with the Congressional Committees to achieve a consensus on a revised acquisition strategy which will permit procurement of the production AN/TTC-42s during FY 1987.

The Digital Communications Terminal (DCT) is a hand-held, key-pad entry, programmable display which transmits and receives information by digital burst over standard DOD military radios. It is used by forward artillery observers, air controllers, and maneuver units to compose, edit, transmit, receive, and display tactical messages, fire control data, and map position graphics. The DCT greatly enhances joint service communications by providing front line source data, in standard message formats, to tactical command, control, and intelligence centers.

The DCT's burst technique radically decreases on-air transmission time and thereby diminishes the risks of electronic detection by an enemy. The digital entry capability, with the use of standard phrases and codes, improves the clarity, brevity, and quality of tactical communications. This is a significant improvement over high risk voice transmissions on the modern battlefield. A low rate initial production buy is now in progress. A full-scale competitive production procurement starts in FY 1987 with our last buys ending in FY 1989.

The Mobile Electronic Warfare Support System (MEWSS) is a low risk effort to configure off-the-shelf and current capability electronic warfare equipment in a Light Armored Vehicle chassis. The system permits intercept, direction finding, and jamming of enemy communications from a protected mobile shelter when supporting forces engaged in amphibious and fast moving operations ashore . This integration was demonstrated when a test-bed Light Armored Vehicle was temporarily outfitted with the proposed electronic warfare equipment and successfully operated in an electronic warfare environment at Fort Huachuca, Arizona, in June 1985.

The Tactical Air Operations Module (TAOM) is a joint service system (Marine Corps and Air Force) which provides for automatic detection, tracking, and identification, in real time, of all aircraft and missiles in a given area. TAOM controls the engagement of enemy air threats and maintains voice and data communications with other command and control systems.

The TAOM is currently in the final stage of the full-scale development phase of acquisition. Successful factory evaluation and demonstration have been completed. It has been deployed and is currently undergoing developmental testing. The final phase of operational testing is scheduled to commence in April 1986 with completion by July 1986.

The present acquisition strategy calls for a Low Rate Initial Production (LRIP) authorization decision in June 1986. An LRIP fixed price annualized contract will then be awarded. The LRIP contract will provide for three options for follow-on production. It will also provide for a reprocurement package option (level 3 engineering drawings) which will be exercised by the government in sufficient time to complete the system in the fourth year of acquisition. The first production option is March 1987, the second is November 1987, and the third is November 1988. The reprocurement package option will be exercised in March 1987 after the first article test and approval of the first deliverables.

With successful completion of operational testing in July 1986, final Approval for Service Use is scheduled for October 1986. This will allow for authorization of the first production option in March 1987.

SUPPORT VEHICLES

In the recent past, our vehicles were older than our drivers. In FY 1982, we started to replace our entire fleet to meet today's demands. In FY 1987, we have essentially achieved this goal. For example, our entire 5-ton truck fleet has been replaced. This includes a major cost avoidance program where we retrofitted a total of 1,850 5-ton trucks in the inventory. In FY 1987, we will complete our procurement of the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) which replaces the jeep and several other vehicles. This vehicle will be used as an ambulance, weapons platform, and cargo carrier among other uses. All variants will have a common chassis, engine, and drive train and will contribute significantly to our overall goals of simplifying and reducing operator and maintenance training and logistics support requirements. Also, our heavy fleet requirements are being satisfied with the ongoing Logistics Vehicle System (LVS) program. This vehicle is in the 16-ton class, is highly mobile, and very versatile. For example, a wide variety of interchangeable rear body units can be attached to a powerful front end power unit. In short, with the former funding levels and current budget request, we have totally revitalized our fleet.

ENGINEER AND OTHER EQUIPMENT

Much of our engineer equipment is overaged and must be replaced. The equipment that is being procured will replace 20 year old items and will enable us to provide our forces more mobility, individual and equipment protection, and the necessities of life such as water.

We are requesting funds to buy various types of modern cranes, tractors, forklift attachments, reverse osmosis water purification units, wet gap bridging, shelters, and containers. These items are not very glamorous, and their importance to combat service support is often overlooked. In fact, they are often the first items identified for budget cuts. However, the success of combat operations often depends on such items, and we are asking for your continued funding support in this area. Most of these ongoing replacement programs will continue into the 1990s.

V. PRE-POSITIONING PROGRAMS

Our Maritime Pre-positioning Ships (MPS) and Norway prepositioning programs are designed to supplement, complement, and enhance our role in the national military strategy.

The first MPS Squadron, which is fully loaded with the combat equipment and 30 days of all classes of supply for a 16,500-man Marine Amphibious Brigade, was deployed on 30 July 1985. Its area of operations is the Eastern Atlantic. The second MPS Squadron was deployed in phases and is currently on station in the Indian Ocean. The third MPS Squadron will deploy to the Western Pacific by the end of September 1986. MPS is on schedule and proving to be an extremely valuable strategic capability. Initial exercises using MPS ships and equipment have been most successful.

Another strategic mobility enhancement is our pre-positioning of selected equipment and supplies in Norway. This program will reduce our response time to the critical northern flank of NATO from weeks to days. The Norway force, a Marine Amphibious Brigade (MAB) sized Marine Air-Ground Task Force, is a totally integrated, air-ground team under a single commander with a sustainability package specifically tailored for cold weather operations.

The Norway pre-positioning program is proceeding on course, and remains a top defense priority for both the United States and Norway. In this regard, Norway has initiated construction of permanent "in-rock" storage facilities for MAB equipment which will greatly enhance the security and maintainability of our equipment. Deliveries of MAB equipment to storage sites in Norway continue on a yearly basis.

VI. COMPETITION AND OTHER MANAGEMENT ACTIONS

I would like to discuss some of the actions that we have taken and continue to take to make best use of funds you have given to us. These actions include enhanced competition, improved information systems management, improved maintenance of equipment procedures, and warehouse modernization.

Competition

Since the inception of the DOD Acquisition Improvement Program Competition Initiative, we have made significant progress toward improving competition in the acquisition process. For example, competition advocates have been appointed at each major field activity with contracting authority, and competition goals have been assigned. I am pleased to report that our efforts so far have been very successful. In FY 1985, we instituted our hotline for reporting items suspected of being overpriced. We received over 375 reports of such items and realized cost avoidances of over $300,000. Further, in FY 1985 we awarded 77 percent of our contracts competitively versus 64 percent in FY 1984, thereby surpassing our assigned goal of 65 percent. In total, the Marine Corps has realized cost avoidances of $8.5 million through initiatives instituted as a result of the competition program.

Other actions include establishing a state-of-the-art facility for automated storage, management, and retrieval of approximately one million engineering drawings at Marine Corps Logistics Base, Albany, Georgia. This ability will greatly enhance preparation of complete and accurate technical data packages for competitive procurement purposes. Delivery of the system is scheduled for FY 1986. We are also structuring low rate initial production contracts to provide us with technical data on end items and repair parts to allow awarding of fully competitive follow-on contracts.

I think it can be seen that we place heavy emphasis on the importance of competition. Senior decision makers and all personnel involved in the acquisition process are keenly aware of the value of full competition.

IMPROVED INFORMATION SYSTEMS MANAGEMENT

Automated Information Systems (AISs) support a wide variety of Marine Corps functions. Many of the Marine Corps' management information and day-to-day operating processes are automated and dependent on the availability of adequate computer support. Many current Marine Corps AISs are in the process of being replaced because the software is costly to maintain and cannot be readily modified to keep pace with changing user requirements or changes in technology. In addition, AISs are being developed to support functions not previously automated. The major AISs under development will support both our active forces and supporting establishment activities and are designed to take advantage of current technology. The major systems include the Marine Corps Standard Supply System (M3S); the Real Time Finance and Manpower Management Information System (REAL FAMMIS); and the Standard Accounting, Budgeting, and Reporting System (SABRS).

M3S will provide a single supply system encompassing both retail and wholesale functions such as inventory control and pre-positioned war reserve. When fully implemented, REAL FAMMIS will support all manpower management and military pay functions such as promotion, recruiting, casualty reporting, reassignment, and retired pay. SABRS will provide the Marine Corps with a standard financial management system that will integrate the accounting, budgeting, and financial reporting functions.

IMPROVED MAINTENANCE OF EQUIPMENT

The Marine Corps Repair and Return Program is designed to extend the life of selected principal items of equipment and thereby increase the materiel readiness of our operating forces.

This program identifies equipment items in need of repair and expeditiously repairs and returns these items to the using units, all within current resources. These actions have the net effect of reducing down time, increasing unit readiness, and extending the life of equipment. We plan to continue this program in the future as contributory to our effort of maintaining the maximum possible state of military readiness in the Marine Corps.

WAREHOUSE MODERNIZATION

Modernization of storage and warehousing operations is being accomplished at several Marine Corps activities. This modernization program provides orderly work flow; maximum use of storage space; upgrading of storage aids; and modern preservation, packaging, and packing facilities, which are essential to the efficiency and economy of storage operations. These storage systems will ensure the lowest cost in labor and maximum utilization of cubic storage space, and will alleviate the need for additional warehouse space, thereby avoiding costly military construction projects.

VII. CONCLUSION

I stated at the outset that the Marine Corps' primary overall goal is readiness for combat. We believe that the procurement budget request submitted for your consideration supports that goal.

Further, we believe you will be pleased that in all of our programs we are maintaining vigilance over our procurement systems to ensure that maximum value is received for each dollar spent. We have charged both our requirements and our contracting personnel to be certain that we buy only what we need and that we pay a fair price. Systems have been put in place for challenging questionable prices and to report any suspected violations. We have ensured that all Marines and civilian employees associated with procurement fully understand procurement procedures and practices. We want the taxpayers to know that we are spending their tax monies judiciously and that we are getting the "biggest bang for their buck." The $1.6 billion that we are asking for in FY 1987 represents the necessary funding to continue the momentum that you have helped us develop in the past few years. We ask for your continued solid support.

The remaining portion of my statement contains the traditional set of exhibits which will assist in your analysis of our budget request.

USMC TOTAL OBLIGATIONAL AUTHORITY

FISCAL YEAR 1987

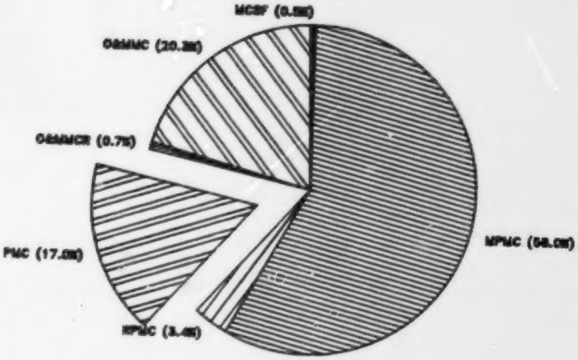


Chart 1 shows the relative Marine Corps Total Obligational Authority (TOA) and is spread as follows:

APPROPRIATION TITLE	FY 1987	PERCENT TOTAL
Military Pay, Marine Corps	5,333.4	58.0%
Reserve Pay, Marine Corps	314.8	3.5%
Operation & Maint, MC	1,864.1	20.3%
Operation & Maint, MCR	65.3	0.7%
Procurement, Marine Corps	1,565.0	17.0%
Marine Corps Stock Fund	45.9	0.5%
	9,188.5	100.0%

As you can see, we are still people intensive. Active military personnel costs are $5333.4 million. This constitutes 58% of TOA. Reserve military personnel costs are $314.8 million, or 3% of TOA; and civilian personnel costs are $451.3 million which equates to 5% of TOA.

The PMC portion of TOA is 17%, down from 19% in FY 1986 and 22% in FY 1985.

CHART 1

PROCUREMENT, MARINE CORPS

FY 1987 BUDGET REQUEST

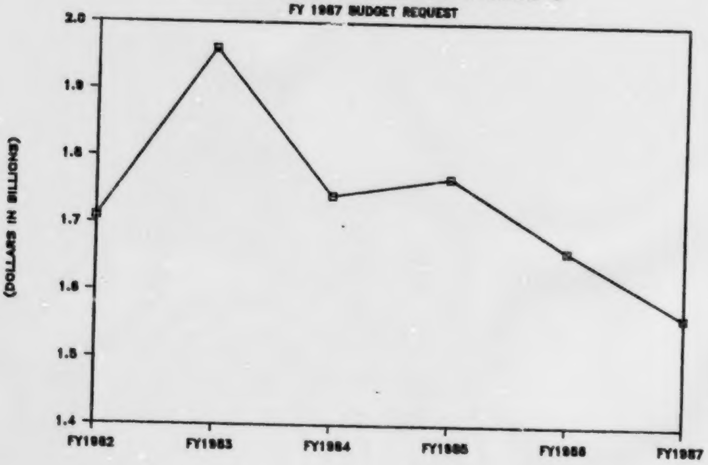
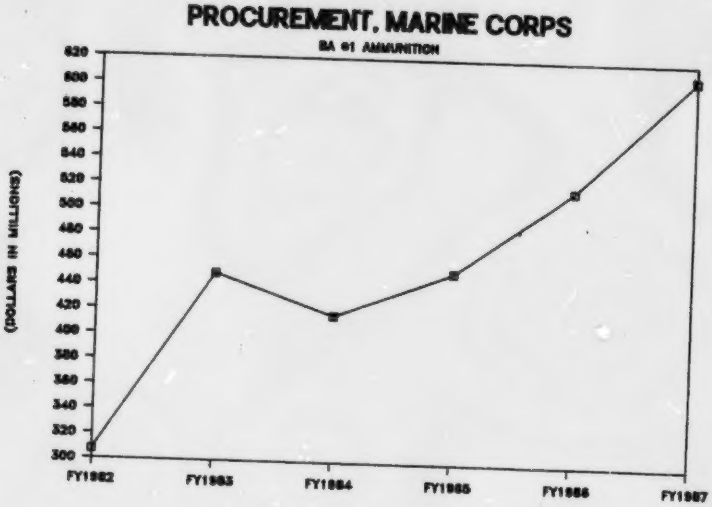


Chart 2 shows the trend in the PMC appropriation from FY 1982 to FY 1987 and displays the amount for FY 1985 to FY 1987. All values are in "then year" dollars. At the levels of recent years, our materiel readiness has improved; we have maintained our sustainability in the face of accelerating requirements; we have modernized our equipment; and we have structured our units to become a more viable combat force.

BUDGET ACTIVITY	FY1985	FY1986	FY1987
1. AMMUNITION	451.8	518.1	608.3
2. WEAPONS & COMBAT VEHICLES	359.7	91.6	97.7
3. GUIDED MISSILES AND EQUIPMENT	259.7	260.0	243.2
4. COMMUNICATIONS AND ELECTRONICS	270.9	287.7	278.9
5. SUPPORT VEHICLES	267.6	277.0	146.1
6. ENGINEER AND OTHER EQUIPMENT	158.7	163.3	166.1
7. SPARES AND REPAIR PARTS	--	63.1	24.7
TOTAL	1768.4	1660.8	1565.0

CHART 2



HISTORICAL TRENDS

Chart 3 depicts the funding profile for ammunition. All values are in "then year" dollars. Our request for FY 1987 is $608.3 million. The increase from 1986 to FY 1987 is due primarily to increases in mortar ammunition in support of the new 81mm mortar. This funding level is supportable from both a requirements and executability point of view.

SCOPE OF AREA

Budget Activity 1 provides for the Marine Corps' annual training needs and the acquisition of war reserve stocks for use in the event of mobilization. Munitions contained in the request include artillery munitions, mortar and small arms ammunition, mines, fuzes, demolitions and pyrotechnic devices, and other ammunition items.

CHART 3

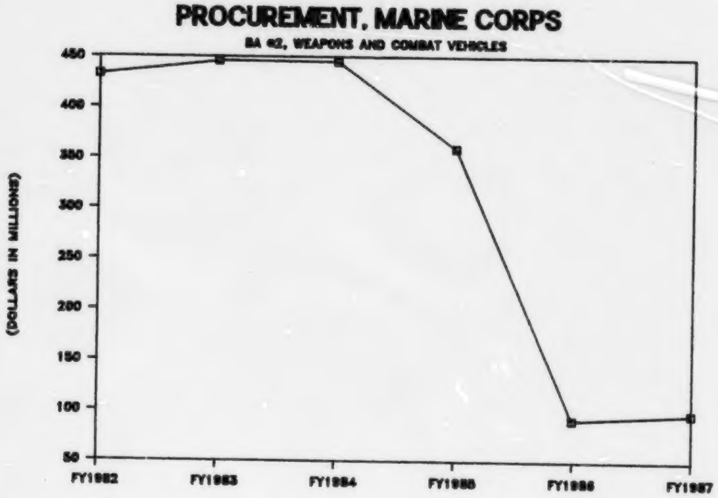
FY 1987 PROCUREMENT, MARINE CORPS

BUDGET ACTIVITY #1, AMMUNITION

($ IN MILLIONS)

MAJOR PROGRAMS	ACQUISITION OBJECTIVE QUANTITY	FY1985 BUDGET DOLLARS	FY1986 BUDGET DOLLARS	FY1987 BUDGET DOLLARS	FY1987 ATTAIN %
155MM	2,054K	214.3	233.6	202.0	75
COPPERHEAD	14K	12.5	53.7	37.8	23
8-INCH	143K	5.8	11.2	0.0	86
MORTAR	3,013K	13.9	28.9	216.8	57
ROCKETS	172K	60.9	61.4	41.3	81
SMALL ARMS	233M	12.3	12.8	18.5	95
GRENADES	875K	2.0	2.2	8.3	58
TRAINING	55K	17.1	34.5	31.1	62
MACHINE GUN	148K	38.1	35.7	32.0	95
LINEAR CHGS	4K	12.9	3.2	0.0	95
ANTI-ARMOR	48K	16.8	0.0	0.0	86
FUZES	7,078K	27.6	31.3	12.9	98
OTHER AMMO	-	17.6	9.6	7.6	-
TOTAL		451.8	518.1	608.3	

CHART 3 (CONT'D)



HISTORICAL TRENDS

Chart 4 depicts the funding profile for weapons and combat vehicles. All values are in "then year" dollars. Our FY 1987 request is for $97.7 million. This program area contains the new start for the AAV7A1 Product Improvement Program. Additionally, we have made substantial progress in satisfying most of our small arms requirements.

SCOPE OF AREA

Budget Activity 2 includes tanks, artillery, small arms weapons, tracked landing vehicles and other combat vehicles and supporting items. This budget activity requires authorizing legislative control.

CHART 4

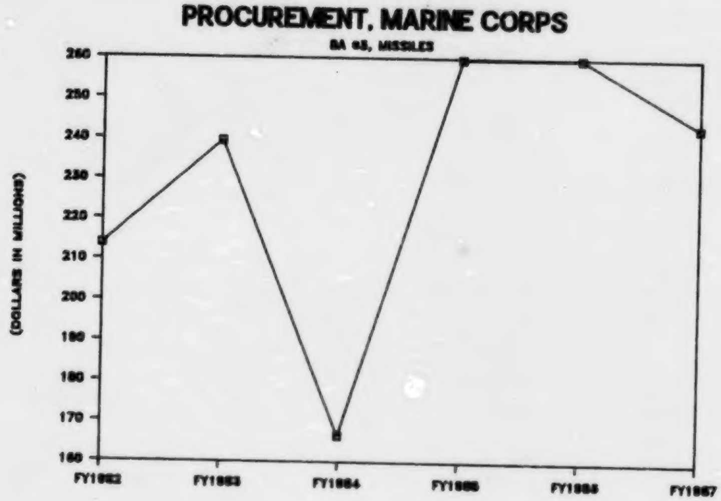
FY 1987 PROCUREMENT, MARINE CORPS

BUDGET ACTIVITY #2, WEAPONS AND COMBAT VEHICLES

($ IN MILLIONS)

	ACQUISITION OBJECTIVE	FY1985 BUDGET		FY1986 BUDGET		FY1987 BUDGET		FY1987 ATTAIN
MAJOR PROGRAMS	QUANTITY	QTY/DOLRS		QTY/DOLRS		QTY/DOLRS		%
POS AZIMUTH DET SYS	83	0	0.0	0	0.0	17	5.6	81
BATTERY COMP SYS	167	0	0.0	166	26.3	0	0.0	99
PER DEFENSE WPN	86K	9K	2.1	10K	2.4	22K	5.4	48
M198 HOWITZER	577	0	0.0	50	26.3	94	45.0	100
M16A2 RIFLE	248K	25K	12.0	28K	12.0	18K	7.9	84
ARMD VEH LAUNCH BRG	37	-	6.6	16	8.6	8	4.5	100
MK-19 MACHINE GUN	2,402	125	1.3	103	1.0	189	1.9	81
81mm MORTAR	628	0	0.0	0	0.0	350	7.5	61
RECOVERY VEHICLE	79	5	4.3	5	4.5	0	0.0	100
AAV7A1	1,317	244	100.4	0	0.0	0	0.0	100
AAV7A1 PIP	-	0	0.0	0	0.0	100	14.3	-
LIGHT ARMD VEH	758	292	217.5	0	0.0	0	0.0	100
SQUAD AUTO WPN	11,259	0	0.0	0	0.0	1K	3.4	61
SHLDR MTD ASS WPN	1,872	600	5.3	535	4.7	0	0.0	100
OTHER	-	-	10.2	-	5.8	-	2.2	-
TOTAL			359.7		91.6		97.7	

CHART 4 (CONT'D)



PROCUREMENT, MARINE CORPS

BA #3, MISSILES

HISTORICAL TRENDS

Chart 5 depicts the funding profile for our missiles. All values are in "then year" dollars. Our FY 1987 request is for $243.2 million. The decrease in FY 1987 over FY 1986 is due to a reduced amount in HAWK and STINGER procurements.

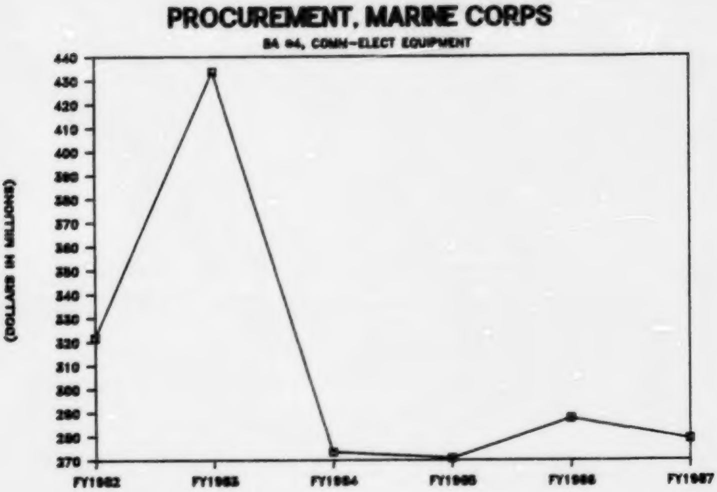
SCOPE OF AREA

Budget Activity 3 includes all missiles with a wire or remote guidance system. Rockets or missiles of a nonguided variety are in Budget Activity 1. In general, this activity supports procurement of surface-to-air guided missiles, surface-to-surface anti-tank guided missiles, and related ground support equipment. Funds requested are essential to support continuing efforts to enhance the air defense and anti-tank/assault capabilities of Marine Corps ground forces. This budget activity requires authorizing legislative control.

($ IN MILLIONS)

MAJOR PROGRAMS	ACQUISITION OBJECTIVE	FY1985 BUDGET		FY1986 BUDGET		FY1987 BUDGET		FY1987 ATTAIN
	QUANTITY	QTY/DOLRS		QTY/DOLRS		QTY/DOLRS		%
HAWK	4,909	500	124.8	550	122.7	430	115.4	60
HAWK (PIP)	-	-	18.4	-	39.1	-	24.3	-
TOW-2	32,506	3822	49.4	4238	39.5	3400	33.5	89
STINGER	13,434	700	58.8	800	57.9	1442	69.3	46
OTHER	-	-	7.9	-	0.0	-	0.0	-
MOD KITS	-	-	.4	-	.8	-	.7	-
TOTAL			259.7		260.0		243.2	

CHART 5



HISTORICAL TRENDS

Chart 6 depicts our funding profile for communications and electronics equipment. All values are in "then year" dollars. Our FY 1987 request is for $278.9 million. The decrease in FY 1987 is primarily due to the stretch out of the Position Location Reporting System (PLRS), completion of selected radio procurements, and revised funding profiles for the Tactical Air Operations Module and Unit Level Circuit Switch.

SCOPE OF AREA

Budget Activity 4 includes all radios, telephones, radars, automatic data processing equipment, and other electronic items. Essentially, this activity supports acquisition of communications and electronics systems required for the conduct of modern amphibious warfare. Specific programs involved include tactical radios and equipment, telephone and teletype equipment, command and control systems, radars and radar equipment, intelligence/communications equipment, repair and test equipment, night vision equipment, and modification kits. Items in this activity are divided into two definable groups, telecommunications and nontelcommunications.

CHART 6

FY 1987 PROCUREMENT, MARINE CORPS

BUDGET #4, COMMUNICATIONS AND ELECTRONICS EQUIPMENT

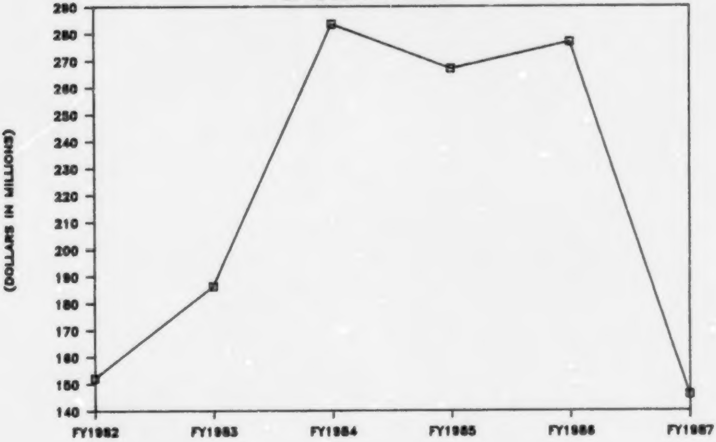
($ IN MILLIONS)

MAJOR PROGRAMS	ACQUISITION OBJECTIVE	FY1985 BUDGET		FY1986 BUDGET		FY1987 BUDGET		FY1987 ATTAIN
	QUANTITY	QTY/DOLRS		QTY/DOLRS		QTY/DOLRS		%
UNIT LEVEL CIR SWTCH	-	0	0.0	-	12.6	-	74.2	-
ULCS-LIFE CYCLE SUP	-	0	0.0	-	15.4	-	8.0	-
TAC AIR OPS MODULE	48	0	0.0	3	71.6	7	50.5	21
AUTO DATA PROCESS	-	-	32.3	-	19.1	-	46.1	-
MOB ELEC WRFRE SUP SYS	12	0	0.0	0	0.0	12	15.4	100
DIGITAL COMM TERM	2,914	232	10.9	0	0.0	472	15.2	57
ELEC MAINT COMPLEX	69	5	3.2	9	5.3	16	10.6	44
ELEC CALIBRATION FAC	19	0	0.0	0	0.0	10	9.8	53
IMPROV DIR AIR SUP CTR	14	0	0.0	0	0.0	5	6.3	36
AUTO TEST EQUIP SYS	162	33	3.5	45	5.2	51	6.1	79
MNPK RADIOS (PRC-68)	10,644	-	2.4	-	12.7	1218	2.7	85
DIG VOICE TERM/TAC TERM	3,448	0	0.0	34	1.5	75	2.7	3
NIGHT VISION EQUIPMENT	16,774	2175	15.7	1292	10.8	499	1.9	96
VEH MTD RADIOS (GRA-39B)	8,630	-	6.5	-	10.4	1161	1.5	100
TAC COM CTR (REPRO/DIST)	31	-	1.5	18	4.0	-	.2	58
POS LOCATION REPT SYS	13	1	27.3	2	46.4	0	0.0	54
TPS-59 DECOY RADAR	11	6	10.4	5	6.1	0	0.0	100
METEOR DATA SYS	18	5	12.7	9	13.3	0	0.0	100
OTHER TEST EQUIP	-	0	21.3	0	4.6	0	17.6	-
OTHER	-	0	123.2	0	48.7	0	10.1	-
TOTAL			270.9		287.7		278.9	

CHART 6 (CONT'D)

PROCUREMENT, MARINE CORPS

BA #5, SUPPORT VEHICLES



HISTORICAL TRENDS

Chart 7 depicts our funding profile for support vehicles. All values are in "then year" dollars. Our FY 1987 request is for $146.1 million. We will have no new starts for FY 1987. The decrease in FY 1987 is due to the completion of the 5-Ton Truck and Retrofit programs and substantial completion of the High Mobility Multi-Purpose Wheeled Vehicle program. In FY 1987, we are nearing the full modernization of our support vehicle fleet.

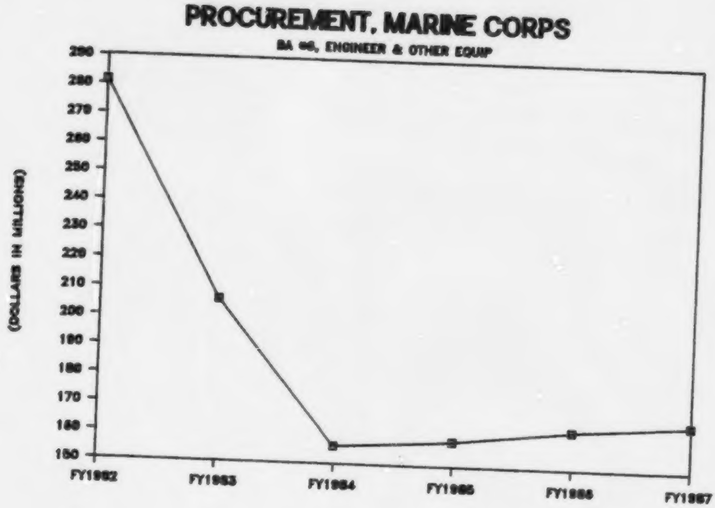
SCOPE OF AREA

Budget Activity 5 supports procurement of commercial passenger and cargo vehicles required in support of Marine Corps-wide post and station operations and tactical vehicles required by deployable operational and support forces. Included in the category of commercial passenger and cargo vehicles are sedans, station wagons, and buses. Tactical vehicles procured under this activity consist of military designed prime movers and general purpose vehicles equipped as needed for support of combat operations.

($ IN MILLIONS)

MAJOR PROGRAMS	ACQUISITION OBJECTIVE QUANTITY	FY1985 BUDGET QTY/DOLRS		FY1986 BUDGET QTY/DOLRS		FY1987 BUDGET QTY/DOLRS		FY1987 ATTAIN %
HMMWV	14,430	3123	72.0	4832	113.0	743	18.8	99
5-TON TRUCKS	8,556	613	57.7	470	46.2	0	0.0	100
5-TON RETROFIT	1,850	523	12.2	691	7.2	209	5.2	100
LOG VEH SYS	3,593	708	66.7	719	69.1	1210	104.0	91
TRAILERS	9,400	905	8.8	1062	10.8	1346	7.7	85
COMMERCIAL VEH	7,147	1010	21.5	1193	22.8	427	6.1	99
OTHER	-	-	28.8	-	7.9	-	4.3	-
TOTAL			267.7		277.0		146.1	

CHART 7



HISTORICAL TRENDS

Chart 8 depicts the funding profile for engineer and other equipment. All values are in "then year" dollars. Our FY 1987 request is for $166.1 million. We stay essentially level in this area with the largest increases occurring in heavy cranes, tractors, the wet gap bridge, and containers.

SCOPE OF AREA

This activity provides for acquisition of combat and combat service support requirements for earth-moving construction equipment, material handling equipment, power generating and environmental control equipment, fuel dispensing systems, special training devices, and equipment to support Marine Corps posts and stations.

CHART 8

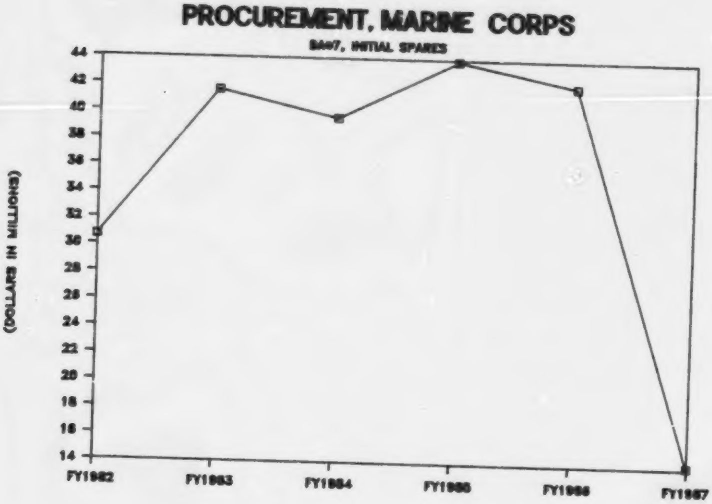
FY 1987 PROCUREMENT, MARINE CORPS

BUDGET ACTIVITY #6, ENGINEER AND OTHER EQUIPMENT

($ IN MILLIONS)

MAJOR PROGRAMS	ACQUISITION OBJECTIVE	FY1985 BUDGET		FY1986 BUDGET		FY1987 BUDGET		FY1987 ATTAIN
	QUANTITY	QTY/DOLRS		QTY/DOLRS		QTY/DOLRS		%
TRACTORS	1,103	190	17.7	202	12.1	550	30.1	92
FORKLIFTS	1,845	388	18.9	225	10.5	300	6.9	68
REVERSE OSMOSIS	804	69	7.9	178	11.2	34	4.2	90
BRIDGES (ALL TYPES)	137	0	0.0	39	13.5	126	7.9	92
SHELTERS	4,885	0	0.0	870	17.4	326	7.2	47
COMMAND SUP EQUIP	-	-	9.6	-	2.8	-	10.5	-
GARRISON MOB EQUIP	-	-	7.3	-	5.7	-	4.0	-
TELEPHONE SYSTEMS	-	-	0.0	-	4.3	-	5.2	-
HEAVY CRANE	236	0	0.0	0	0.0	71	26.0	55
ROAD GRADER	181	0	0.0	118	8.4	63	4.4	100
CONTAINERS	53,666	402	.9	4900	7.0	10570	15.2	37
FUEL/WATER/PUMP	4,571	947	5.5	533	4.1	621	4.9	62
POWER EQUIP ASSORT	9,020	1317	16.5	807	8.3	635	6.0	83
MOB ELEC PWR DIST SYS	67	10	5.1	17	5.0	4	3.0	90
FIELD WIRING HARNESS	1,704	396	2.6	0	0.0	749	5.4	67
TRAINING DEVICES	-	-	8.2	-	12.0	-	7.4	-
OTHER EQUIPMENT	-	-	58.5	-	41.0	-	17.8	-
TOTAL			158.7		163.3		166.1	

CHART 8 (CONT'D)



HISTORICAL TRENDS

Chart 9 depicts the funding profile for initial spares and repair parts. All values are in "then year" dollars. The procurement of initial spares and repair parts depends on end item acquisition/fielding plans. Therefore, the funds requested from year to year can vary markedly and still provide the full requirement for that year. Consequently, even though our FY 1987 request is $27.9 million lower than FY 1986, we are fully funded for Initial Spares at $14.2 million in FY 1987.

SCOPE OF AREA

Funds provide for the procurement of an initial allowance of spares and repair parts to support that quantity of all new equipment/systems being introduced into the Marine Corps in FY 1987.

INITIAL SPARES

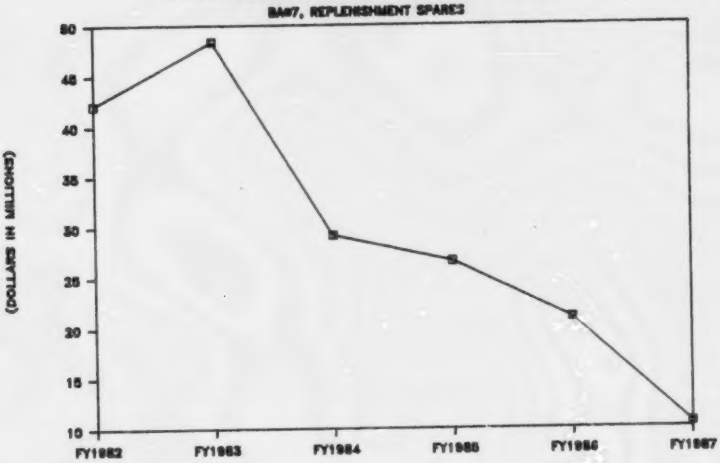
($ IN MILLIONS)

MAJOR PROGRAMS	FY1985 BUDGET	FY1986 BUDGET	FY1987 BUDGET	FY1987 ATTAIN
	DOLLARS	DOLLARS	DOLLARS	%
WPNS/COMBAT VEH	4.1	6.2	.9	100
GUIDED MISSILES	7.3	.4	1.3	100
COMM-ELEC	22.8	20.3	9.7	100
SUPPORT VEHICLES	8.3	13.2	1.9	100
ENGINEER EQUIPMENT	1.4	2.0	.4	100
TOTAL	43.9	42.1	14.2	100

CHART 9

PROCUREMENT, MARINE CORPS

BA#7, REPLENISHMENT SPARES



HISTORICAL TRENDS

Chart 10 depicts the funding profile for replenishment spares. All values are in "then year" dollars. Our request for FY 1987 is $10.5 million. This amount represents a decrease of $10.5 million from the FY 1986 funding level. This decrease relates to an obligation performance problem which we are in the process of correcting.

SCOPE OF AREA

Funds are required for procurement of depot reparable spares and repair parts essential for the continued support of end items of equipment currently fielded in the Fleet Marine Force to include peacetime repair cycle washout rates and a portion of known pre-positioned war reserve deficiencies.

REPLENISHMENT SPARES

($ IN MILLIONS)

MAJOR PROGRAMS	FY1985 BUDGET DOLLARS	FY1986 BUDGET DOLLARS	FY1987 BUDGET DOLLARS	FY1987 ATTAIN %
WPNS/COMBAT VEH	1.5	6.9	4.5	85
GUIDED MISSILES	.5	2.1	.9	85
COMM-ELEC	19.9	7.7	3.7	85
SUPPORT VEHICLES	4.3	1.0	.5	85
ENGINEER EQUIPMENT	.4	3.3	.9	85
TOTAL	26.6	21.0	10.5	85

CHART 10

READINESS

General WENT. All right, sir. I am certainly privileged to appear before this committee today to present our 1987 Marine Corps procurement budget request.

Last week when I appeared here to testify in support of our O&M request, you indicated a great deal of concern that we not sacrifice readiness for capital investment as the Congress and the Administration tries to deal with the deficit. I want to assure you the procurement request before you is carefully balanced with our O&M and personnel requests.

As you indicated, we are asking for approximately $1.6 billion in procurement in 1987, which is less than we requested last year. This reduced procurement request is partly due to buying out of certain programs in 1986 with only one significant new start in 1987. But it is principally due to the Commandant's guidance that we concentrate on readiness with our current investment program.

Thus, the procurement request you have before you was scaled down in development of our budget to focus on sustaining and enhancing readiness.

We have high hopes that the committee will find it reasonable and support it with little or no change.

With that short introduction, I am prepared to respond to any questions you may have.

PROCUREMENT/OPERATION AND MAINTENANCE BALANCE

Mr. CHAPPELL. Thank you, General.

Your statement has a chart which shows that for the first time since fiscal year 1981, the operation and maintenance budget exceeds the procurement budget in fiscal year 1987. Why has this happened?

General WENT. It is a reflection partly of the buyout of a number of major programs, for example, the LAV and a good part of our rolling stock of trucks. But mostly reflects an effort to place emphasis on our readiness in O&M.

Mr. CHAPPELL. What will be the mix between O&M and procurement in the out-years of your current five-year budget?

General WENT. I would think that in the years to come will be pretty much the same; that is, fiscal years 1988 and 1989 it could well be a similar sort of balance. But, as we get into later years and begin to procure M-1 tanks, for example, which is going to be very expensive for us, we will see some growth in the procurement account.

Mr. CHAPPELL. Are you satisfied with the mix?

General WENT. We are very pleased with the mix this year.

Mr. CHAPPELL. Aside from the M-1 tank procurement, do you have any other major hardware items slated for procurement in the next five years?

General WENT. Some of our command and control equipment, such as MIFASS, which we will talk to you about in a couple years, will be large cost items relative to the sorts of things we buy now.

TANKS

Mr. Chappell. You are going to replace your M60A1 tanks and the M1A1 tanks with 20-millimeter guns beginning in FY 1988? I notice you intend to drop the total number from 716 M60A1s to 560 M1A1s. How do you expect to have the same combat capability with only 73 percent of the tanks you now have?

General Went. We dropped the number of tanks per battalion down somewhat because of the increased capability. We go from the platoon of currently five tanks down to four, which reduces the battalion from 70 to 58, and according to the studies we have done, that would give us an improved capability over what we currently have.

Mr. Chappell. Last year you estimated the five-year cost of this replacement to be $2.27 billion, including ammunition, spares, special tools and test equipment. What is your current estimate?

General Went. The specific estimate is in that range. I would have to provide that for the record unless one of my gentlemen can help me out today, but it is in the two-plus billion range.

[The information follows:]

The current estimate to procure the M1A1 is $2.65 billion. These costs include the tank, ammunition, spares, special tools, test equipment and recovery vehicles offset by anticipated cost savings from a multi-year procurement currently being negotiated by the U.S. Army.

Mr. Chappell. The Army is just beginning procurement of new trailers and recovery vehicles because of the current equipment cannot handle the weight of the M1A1. Your $2.27 billion cost estimate last year did not include these additional vehicles. How much is funded for these vehicles in your five-year budget?

General Went. Again, on recovery vehicles that is a response that I would have to provide for the record.

[The information follows:]

We currently have $2.3 million in fiscal year 1986 to buy 22 70-Ton trailers. The current recovery vehicle will receive a modification which will upgrade the engine, winch, and boom capacity. $57.1 million has been planned to support this upgrade and is included in the current estimate for the M1A1 procurement.

Mr. Chappell. Will you make any changes to the M1A1 that the Army is procuring or will it be the same tank?

General Went. Essentially it is the same tank. We have deep-water fording requirements so we have an effort going on concurrently with the Army to provide a deep-water fording capability. But essentially that is the one major difference.

Mr. Chappell. Do you provide the same armor?

General Went. Yes, sir.

Mr. Chappell. The budget also includes $1 million for applique armor for the current M60A1 fleet. Why are those M60A1 modifications being made when the tanks will soon be phased out of the inventory?

General Went. Our profile does not call for buying the M-1 tank until 1989, and essentially spreading the buy over four years if we are able to do that in an economically sound way. Thus, we will have our current M60 tanks with us for some time to come.

Mr. CHAPPELL. When you bring on the M1A1 tanks in the numbers you want, are you going to simply put the other tanks in mothballs?

General WENT. The M60 tanks are essentially phasing out of the U.S. system. Beginning in FY 1991, we will phase out 70 to 120 tanks per year. However, some will remain in prepositioned war reserve for some time.

We have got some old equipment and we will work with the Army, the tank sponsor, in the final disposition of those equipments

CANCELLATION OF SEAFIRE

Mr. CHAPPELL. The Marine Corps has been one of the strongest supporters of the Navy's five-inch laser guided projectile. The projectile, shot from ship guns, is designed to defeat shore targets.

A primary means of providing the required laser designation for the five-inch projectile was the shipboard Seafire system. However, the Navy recently cancelled Seafire.

How do you propose to provide laser designation for the five-inch guided projectile now that Seafire has been cancelled?

General WENT. Well, we are of course sorry to see the Seafire disappear. I am not sure that it is totally dead. There may be some opportunity to reconsider that decision.

However, we can illuminate targets with our MULE system, with OV–10 aircraft and A–6 aircraft. But it certainly does put our smart munitions in jeopardy somewhat.

Mr. CHAPPELL. Don't you have a limitation on range on the MULE?

General WENT. We do.

Mr. CHAPPELL. How does that affect the problem?

General WENT. As I said earlier, we have the capability to do the job with OV–10 or A–6 aircraft, so we have some vehicles to get forward to designate targets.

Mr. CHAPPELL. You are really saying the cancellation of the Seafire has not really reduced your enthusiasm for that?

General WENT. No, I wouldn't want to—I wouldn't quite say that. It puts us in a different world of having to find a way of working around the problem which, I suspect, is not going to be as efficient or as useful had Seafire continued but——

Mr. CHAPPELL. In other words, you are hopeful.

General WENT. Yes.

Mr. CHAPPELL. You are hopeful it will be around.

General WENT. Yes, sir.

Mr. CHAPPELL. Mr. McDade.

MORTARS

Mr. McDADE. Thank you, Mr. Chairman.

General, welcome. The budget includes $7.5 million for procurement of 350 improved 81-millimeter mortars. The total planned procurement is 614 at a cost of $13.2 million. Why is the Marine Corps buying this mortar?

What is the need for this mortar? It is the improved 81-millimeter.

General **Went**. I am not sure how to respond to that other than to say that the 81-millimeter mortar is our principal weapon for indirect fire in general support of our infantry battalions. The improved rounds give us improved distance and lethality. We are well committed to the 81-millimeter mortar, and have no substitute for it, so it—

Mr. **McDade**. Do you know how many are in inventory and how many will be replaced by the new mortar?

General **Went**. Are you speaking of the mortar or ammunition?

Mr. **McDade**. The 81-millimeter mortar.

General **Went**. Okay.

Mr. **McDade**. You can put that in the record if you wish.

[The information follows:]

We have a total of 687 of the old M29 mortars in the inventory. They will be fully replaced by 664 new I 81 mortars.

General **Went**. I think it would be best if I gave you the specific numbers for the record.

Mr. **McDade**. The Marines earlier procured 50 I-81 mortars for use on the Light Armored Vehicle. How many of the 614 in the current procurement will be for the LAV?

General **Went**. None. The full LAV requirement was satisfied with the initial buy of 50 mortars.

Mr. **McDade**. Do you still plan to buy the 120-millimeter mortar?

General **Went**. We never had any plans to buy the 120-millimeter mortar.

Mr. **McDade**. That is contrary to what General Kelly told me.

General **Went**. Well, I——

Mr. **McDade**. I think you have been talking about it for some time waiting for the Army to go ahead and do something.

General **Went**. I will have to chat with General Kelley and get back to you on that.

We currently have, to my knowledge, no plans to acquire the 120-millimeter mortar.

Mr. **McDade**. I am informed that you have them down at Quantico testing them.

General **Went**. True.

Mr. **McDade**. What were you testing them for?

General **Went**. We test——

Mr. **McDade**. Take a look at that and put it in the record, will you?

General **Went**. We test all sorts of things we don't buy.

Mr. **McDade**. I am sure you do.

[The information follows:]

The Marine Corps does not have a requirement on record for the 120mm Mortar at this time.

Testing of the 120mm Mortar is being conducted at Naval Surface Weapons Center (NSWC) Dahlgren. The test of the 120-millimeter mortar is primarily designed to see the effect of a heavy mortar on a vehicle using a newly developed soft recoil mount. The Marine Corps is using an LAV in the test. However, the results will be equally applicable to the Army M113, a tracked vehicle.

General **Went**. I would just say that in reviewing our 1988 program, which will go to the Department of Navy next month, and of course will turn into the budget we bring next year, we looked at the 120-millimeter mortar as a possible requirement and did not include it in our 1988 program.

But to resolve the issue of why are we looking at it and what are the Commandant's interests, we will come back to you.

Mr. **McDade**. I think you will find the record will show clearly it is something the Marines have wanted for a time, but you have to wait for the Army to go through the process before you buy it. I think the record will show that.

There is a training range round, one-tenth range round that the Army is beginning to procure. I don't know if you have any familiarity with that at the moment. Do you?

General **Went**. I am aware that the Army does have it and we are looking at that, yes, sir.

Mr. **McDade**. Will you furnish to my staff, and provide for the record, please, tell us how many 60-millimeter mortars are in the Marine inventory? How many 81? How many improved 81 mortars you plan to procure and tell us what your requirements are for training ammunition for all of them.

General **Went**. All right, sir. We will be glad to.

[The information follows:]

There are 687 60mm mortars and 687 81mm mortars in the Marine Corps inventory. We plan to procure 664 I81 mortars. The annual ammunition requirements for training are listed below.

60MM Mortar:	*Rds.*
60MM Illumination	23,820
60MM Smoke	14,831
M88 60MM High Explosive	131,580
XM816 60MM Practice	40,000
81MM Mortar:	
M374A2 81MM High Explosive	154,800
M375A2 81MM Smoke	28,220
M301A3 81MM Illumination	23,167
I81MM Mortar:	
M734 81MM High Explosive (Time)	21,000
M935 81MM High Explosive (Point Det)	26,000
XM819 81MM Smoke	21,000
XM853 81MM Illumination	18,000
XM879 81MM Training	50,000

Mr. **McDade**. Thank you, Mr. Chairman.

Mr. **Chappell**. Mr. Young.

LAV AIR DEFENSE

Mr. **Young**. General, last year the Army's DIVAD air defense gun system was cancelled and the Army is looking at alternatives including the ground vehicle with turret mounted guns and/or missiles.

The Marine Corps is also looking at an air defense variant for the Light Armored Vehicle. Are the Marines and the Army looking at the same turret and weapon approaches?

General **Went**. Yes, sir. We are interested in equipping about 125 of our LAVs with air defense capability. We are really in the preliminary stages of that. We have a commitment to brief the Secretary of the Navy on that during May.

We will probably look at four prototypes in coordination with the Army. We are interested in something that, while we would mount it on the LAV, the Army might well mount it on another vehicle.

Our expectation is that the Army would choose a tracked vehicle. We are reluctant to introduce another vehicle simply for the air defense capability, and we prefer to mount some weapons, some turret, that might be compatible with what the Army is doing on our LAVs.

So we are looking at a procurement that is probably off in 1991 and we intend to work very closely with the Army to develop a capability that could be mounted on different vehicles.

Mr. YOUNG. Do you expect to need additional LAVs for the air defense role?

General WENT. No, we would do that within the number of LAVs currently authorized.

Mr. YOUNG. Provide for the record, if you would, what the present R&D and procurement profile for the LAV program is and also your current milestones.

General WENT. We certainly would.

[The information follows:]

The R&D and procurement funding profile for the LAV Air Defense (AD) vehicle is as follows:

[In millions of dollars]

Approp	FY 1987 & Prior	FY 1988	FY 1989	FY 1990	FY 1991	Remaining Costs
R&D	16.8	16.5	15.7	8.4	0.5	0.5
Procurement				242.6	15.2	103.2

The milestones for the LAV (AD) are as follows:

Milestone Decision	Date	Action Taken
MSARC IIA	Mar 1987	R&D Source Selection.
MSARC III	Jan 1990	Production Decision and Approval for Service Use.
MSARC IIIA	Oct 1990	Production Source Selection.
Initial Operational Capability	1st Qtr FY 1992	

The LAV-AD acquisition strategy currently being recommended is for two competing contractors to build (2) prototypes each. One contractor will be selected for production of 125 AD variants.

Mr. YOUNG. A milestone II decision on the Marine Corps LAV air defense system was scheduled for April 1. What was decided at this session?

General WENT. We did have a meeting in the headquarters at which time we decided to proceed with development, and that is where I come up with the number of 125. As I said, that is still in the preliminary stage. We owe the Secretary of Navy a briefing on that, and so it really isn't that mature to say that is a solid program.

Mr. YOUNG. One of the Marine Corps gun candidates is a 25-millimeter Gatling gun. The claim is made that this gun is already in the inventory and the ammunition is used in other ground and aviation systems.

Provide for the record the specifics of this claim.

General **Went**. Yes, sir.

[The information follows:]

The 25mm Gatling gun referred to is the GAU-12/U used by the Marine Corps on the AV-8B aircraft. The 25mm ammunition, in addition to GAU-12/U use, is also used in the M242 cannon mounted in the Marine Corps' LAV-25 and in the Army's Bradley Fighting Vehicle.

Mr. **Young**. Thank you very much, Mr. Chairman.

Mr. **Chappell**. Mr. Miller.

Mr. **Miller**. Mr. Chairman, I have two questions and I will not ask them now, and if the General would answer them for the record, I would appreciate it very much.

I yield back my time.

[Clerk's note.—Questions submitted by Mr. Miller and the answers thereto follow:]

PRINCIPAL END ITEMS/SECONDARY ITEMS

Question. General Went, on page 2 of your statement, you refer to your goal of exceeding Defense Department war reserve goals for certain items of equipment. Could you please explain more specifically what is meant by "principal end items" and "secondary items?" Also tell us what your goals are for these items and where you will stand at the end of fiscal year 1986 and 1987 deliveries.

Answer. A principal end item is a final combination of components, parts and materials which, when procured, is ready for its intended use, such as a tank, truck, or radio. Most of the items in the Marine Corps budget, e.g. the M16A2 rifle, the MK-19 Machine Gun, the Hawk Missile, and 5 Ton Trucks, are principal end items.

Secondary items do not in themselves constitute a usable entity. They include such things as reparable components, subsystems and assemblies e.g., truck transmissions and engines, as well as initial and replenishment spares.

The charts contained on pages 13, 15, 16, 18, 19, and 21 of my prepared statement show most of the principal end items in the Marine Corps budget along with their associated attainment levels for FY 1987. The charts on page 22, and 23 show the FY 1987 attainment levels for initial and replenishment spares.

The FY 1986 and 1987 attainment levels of all principal end items and secondary items are contained in the detailed line item back-up books provided to the committee as part of our budget submission.

SQUAD AUTOMATIC WEAPON

Question. According to the Army, the Squad Automatic Weapon (SAW) had several problems: (1) An exposed hot barrel that can burn a user's hand; (2) sharp edges that have frequently cut hands, and (3) a front sight that requires special adjustment tools. While the Army has stopped procurement, apparently you are going ahead with plans to purchase this weapon as is. Have these problems been solved?

Answer. Yes, in that they were not really problems for us in the first place. Any weapon barrel gets hot when fired, and all of our infantry weapons have portions of their barrels exposed. This is necessary to keep weight down and to permit heat to dissipate. Any weapon will burn if you grab the exposed portion of the barrel. We train our gunners to grab the weapon by the hand grips provided on the weapon. The part on the weapon that was cutting the Army's gunners is the link ejection port cover. By training our shooters to pull the feed rod to the rear by grabbing the handle with the palm of the hand up, we eliminated the problem. A tool is required to adjust the front sight when zeroing the weapon only. At all other times the SAW sights are adjusted using the rear elevation and windage knobs. The special tool required has been located at the battalion level and poses no special problems for us.

[CLERK'S NOTE.—End of questions submitted by Mr. Miller.]

Mr. CHAPPELL. We will put the remainder of the questions in the record for you to answer, General.

General WENT. All right, sir.

Mr. CHAPPELL. Thank you.

[CLERK'S NOTE.—Questions submitted for the record and the answers thereto follow:]

UNIT LEVEL CIRCUIT SWITCH

Question. The budget includes $74.2 million for procurement of the Unit Level Circuit Switch (ULCS). This is the second year of procurement. Last year, Congress funded for TTC-42 "large" switches, but stipulated that further procurement await completion of first article tests. What has the Marine Corps done in response to this direction?

Answer. Soon after the FY 1986 Appropriations Bill was signed, the Marine Corps directed that the Request for Proposal (RFP) be modified in accordance with the Congressional language. The RFP was re-issued to all bidders and proposals are currently being evaluated. The Marine Corps is also working with Congressional staffers to modify the acquisition strategy to allow procurement of the AN/TCC-42 in FY 1987.

Question. What specifically will be included in the "Limited Operational Test" (LOT) (to allow procurement of the TCC-42 in FY 1987)?

Answer. The limited operational test (LOT) will evaluate the reliability, availability, maintainability (RAM) and performance of the equipment of the contractor who wins the competitive production contract.

Question. What are the milestones for the LOT?

Answer. The winning contractor is required to deliver three (3) AN/TTC-42's and nine (9) SB-3865's to the Joint Test Facility, Ft. Huachuca, AZ within 90 days after contract award. The contractor is required to provide up to six (6) weeks of training for designated operators. The length and exact scope of testing will be determined by MCOTEA once the production contract winner has been selected.

Question. How is this LOT different from a First Article Test?

Answer. A first article test is normally run in the contractor's plant with engineers. The LOT will be run with military communicators in an operational environment.

Question. At the end of the last ULCS test, the Marine Corps Operational Test and Evaluation Agency recommended that the TTC–42 be disapproved for production. What leads you to believe that the second LOT will be successful?

Answer. The Marine Corps instituted a Follow-on R&D (FORD) program in June 1984 to correct deficiencies found in all previous phases of ULCS testing prior to production or shortly after production. Shortly thereafter, the Marine Corps made the determination to conduct a LOT in late September 1984, before making a production decision on the ULCS. Once that determination had been made, all efforts on the follow-on R&D (FORD) program were suspended as the equipments were prepared for shipment to the Joint Test Facility, Ft. Huachuca.

When the Marine Corps Operational Test and Evaluation Activity (MCOTEA) conducted its LOT in Jan/Feb 1985, the FSED contractor (ITT) has incorporated only three (3) months of corrective effort into the switches. An additional 14 months of corrective effort have now taken place since those equipments were shipped for the first LOT. As of January, 1986, the program office estimated that only 1 of 292 performance reports written against the ULCS during any phase of testing is still considered to be unresolved. All the others have undergone preproduction re-engineering or have had engineering fixes identified. The software, which accounted for eighty (80) percent of the deficiencies in the LOT, has been corrected and demonstrated. The only outstanding performance report is the Demand Access Multiple Address (DAMA) interface which is a satellite interface format as yet undefined by the Army.

Based on the above, the Marine Corps expects a recommendation for approval for service use and production from MCOTEA.

Question. Will these tests show conclusively whether all past deficiencies have been corrected?

Answer. No, some of the deficiencies involve engineering fixes that cannot be cost effectively incorporated into engineering models of the system. Although these corrections will not be conclusively verified by field testing until a production system is built, the Marine Corps has monitored the contractor's progress via demonstrations and analysis at the contractor's facility and is satisfied that the corrections will be in the production systems.

Question. What will you do if the tests result in yet another failure?

Answer. The Marine Corps and Air Force will re-evaluate the program schedule and the options available in light of the most current information.

Question. What is the current ULCS procurement strategy?

Answer. The Marine Corps intends to proceed to contract in FY 1986 as Congressionally permitted in the Appropriations Bill. Because of the urgent operational requirement for AN/TTC–42's, however, the Marine Corps is working with the staffs of the four Congressional Committees on a revised strategy that would permit procurement of those equipments starting in FY 1987. That revised strategy is to request that the Congress fully fund the ULCS budget request of the Marine Corps and the Air Force in FY 1987. The funds for AN/TTC–42's would not be obligated however, unless the MCOTEA Independent Evaluation Report (IER) granted approval for service use as a result of passing a post award Limited Operational Test (LOT).

The effect of the FY 1986 Appropriations language is to deny the Marine Corps and the Air Force the ability to procure AN/TTC-42's until FY 1990. That is, given a May, 1986 production contract, First Article Test results would not be known until month 27 after the contract; or late August, 1988. Consequently, the FY 1990 budget request would be the first opportunity to seek Congressional approval based upon the results of First Article Test.

The current ULCS production Request for Proposal (RFP) contains options for AN-TTC/42's starting in FY 1987. This strategy would permit the Marine Corps and Air Force to procure urgently needed AN/TTC-42's three years earlier than implied under the FY 1986 Approriations Bill. It would also satisfy the concerns of the Congress in that no funds would be placed on contract for AN/TTC-42's in FY 1987 unless the Marine Corps' operational testers were satisfied that it was ready for production.

Question. Competition was introduced into this program last year. Your budget backup sheets indicate a sole source strategy for the TTC-42 and the SB-3865. By how much should your budget be reduced to account for competition?

Answer. The Marine Corps requests that no budget reduction take place at this time. The effect of competition on the cost of the units will be known by the end of May 1986 when the production contract is awarded.

Question. What are the estimated FY 1986 savings?

Answer. This answer cannot be provided until after the contract has been awarded. This information will be provided in early June 1986.

Question. What is the total cost for the Marine Corps ULCS program? Provide a profile for the record.

Answer. The current estimated total cost for the Marine Corps ULCS program follows:

[In millions of dollars]

	1985 and prior	1986	1987	1988	1989 & Beyond
Appropriation: R&D	$92.0	$6.2	$2.425	$4.5	0

Procurement:	
ULCS System:	
FY86	$12.6
FY87	74.2
FY88	87.6
FY89	83.8
FY90	70.2
FY91	0
ULCS Life Cycle Support:	
FY86	$15.4
FY87	8.0
FY88	5.2
FY89	3.3
FY90	2.0
FY91	0

Question. What is the procurement profile for the Air Force and the Army?

Answer. The procurement profile for the Army is undefined at this time. The procurement profile for the USAF follows:

FY86	$14.0
FY87	23.0
FY88	15.8
FY89	22.8
FY90	22.8

Question. The budget indicates that $6.3 million of the $12.6 million provided in FY 1986 will be used for First Article Tests. What is the basis of this estimate and why is it so high?

Answer. The total estimated First Article costs for the AN/TTC-42 are approximately $25 million for all services. The cost estimate is based on previously submitted proposals for similar levels of effort. These costs represent 27 months of effort that include the unit cost of the four First Article units, equipments, set-up costs for the production line, and actual testing of the four units in the plant, at special laboratories, and at Ft. Huachuca, AZ.

The Marine Corps' share is $19.0 million; the USAF share is $6.0 million. Marine Corps funds are being used from both the system line and the life cycle support line. The AN/TTC-42 first article costs are consistent with programs of similar technological complexity. The actual costs will be known when the production contract is signed.

Question. The P-22 shows a separate entry for "Fault Assistance Modules" for the TTC-42 and the SB-3865. Explain and justify these costs.

Answer. Fault Assistance Modules (FAM) are trouble-shooting aids such as selected printed wiring boards that the operator/maintainer will use to locate system faults. The FAM's are consistent with the maintainance concept and will provide the following benefits:

Eliminate the need for on-site technical representatives.

Allow the Marine Corps to use operators vice maintenance personnel to correct system faults at the organizational level.

The contents of the FAM's were determined from the Logistics Support Analysis (LSA) and the Level of Repair Analysis (LORA). Upon determination of the FAM contents, the pricing estimate was obtained from the Contracting Office of the Principal Development Agency based on the ITT/DCD sole source proposal submitted in 1984.

Question. In fiscal year 1988, $20 million is projected for Fiber Optics Cable. What is the basis of this request?

Answer. The Unit Level Circuit Switch Program is an interrelated family of equipment composed of the following items:

AN/TCC-42—150 line switch;

SB-3865—30 line switch;

TA-954—a digital, non-secure telephone with which to make telephone calls.

TD-1234—a digital, multiplex unit which will allow multiple user at a distant location to access the telephone system.

Fiber Optic Cable System (FOCS)—a collection of items listed below which will connect the ULCS equipment.

The FOCS consists of the following items:

1 Km lengths of fiber optic cable; estimated unit cost is $4,000; quantity to be procured as 1,588.

300m lengths of fiber optic cable; estimated unit cost is $3,000; quantity to be procured is 1,691.

Permanent Repair Kit; estimated unit cost is $4,000; quantity to be procured is 16.

Field expedient splice kit; estimated unit cost is $1,000; quantity to be procured is 612.

Field test set; estimated unit cost is $5,000; quantity to be procured is 612.

Digital applique unit—this converts the 2.304 Mbit electrical signals from the switch into light pulses which are sent down the fiber optic cable. The estimated unit cost is $5,000; quantity to be procured is 947.

Intermediate level maintenance kits—estimated unit cost is $3,000; quantity to be procured is 16.

Question. The budget also includes $8.0 million ULCS Life Cycle support. Last year $15.4 million was provided for this purpose. Why are Life Cycle support costs shown as a separate line in this program and no other?

Answer. Life Cycle support encompasses all actions performed by the lead service in a TRI-TAC procurement to ensure that logistics support is available to all services at the time of initial fielding and throughout the expected life of the equipment. The Life Cycle support line funds are to support all Joint-Service users logistic requirements while the ULCS System line only funds Marine Corps procurement quantities. The Marine Corps is responsible for the establishment of joint service training, provisioning, depot maintenance, software support, configuration management and development of adequate operator and maintenance manuals and reprocurement data. This effort was broken out separately in order to ensure an appropriate level of visibility for internal management, better budgeting and accounting control and to ensure that all Joint-Service life cycle logistic support areas were being properly funded.

Question. The P-22 shows that $13.2 million of FY 1986 ULCS-LCS is for TTC-42 first article tests. Why is this activity funded on two lines, and why is the total cost so high, and why is no FAT funding shown for the SB-3865?

Answer. The Marine Corps share of the First Article Test costs is $19.0 million. Neither the ULCS System Line nor the Life Cycle support line contain sufficient funds unless they are combined. The FY 1986 budget reflects the adjustments that had to be made to both budget lines in order to accomplish the congressionally directed ULCS acquisition strategy.

Those first Article costs associated with the SB-3865 are included in the unit cost for that equipment, which is the normal costing procedure for production contracts.

Question. The P-22 indicates that most of the ULCS-LCS line is for contract support and documentation. What is the basis of these estimates?

Answer. The ULCS-LCS line is for logistics deliverables and documentation from the contractor that the Marine Corps requires to establish a life cycle logistics support structure and provide logistics support to the joint service users of the ULCS. The cost estimates are based on a "should cost" analysis and previously submitted proposals for similar levels of effort. The actual costs will be known when the production contract is signed.

AAV7-A1 PRODUCT IMPROVEMENT

Question. The budget includes $14.3 million for the initial procurement of the AAV7-A1 Product Improvement Program. What are the details of this program?

Answer. The AAV7A1 Product Improvement Program is a series of improvements designed to enhance overall system effectiveness. These improvements will significantly improve the firepower, waterborne mobility and survivability of the AAV7A1. Specific improvements are outlined below.

[In millions of dollars]

	FY87	FY88	FY89	FY90
Funding Profile	14.268	31.808	34.473	26.553

Upgunned Weapons Station (UGWS).—UGWS will provide significant firepower improvements over the current electric drive weapons station. The UGWS will mount both a Mark 19 MOD 3 40MM Machine Gun and a M2 Heavy Barrel .50 Cal Machine Gun. The UGWS provides improved firepower and reliability over the current M85 .50 Cal Machine Gun. Installation of the UGWS will not require modifications to the vehicle. Procurement will be completed during FY 90.

Bowplane.—The Bowplane is a planing device which is mounted to the bow of the AAV7A1. It will improve water-borne mobility by offsetting the tendency of the vehicle to "nose dive" as a result of increased weight forward of the vehicle's longitudinal center of gravity. This improvement, with procurement scheduled through FY90, will improve the maneuverability of the vehicle as well as provide for safe operation since it will eliminate water over the driver's vision blocks.

Applique Armor.—The Applique Armor consistes of bolt-on armor plates which will provide increased survivability against threat of small arms, heavy machine guns and fragment producing munitions. This improvement is designed to counter the increased lethality of threat weapons by providing increased crew and troop protection. This program will be completed in FY89.

Question. Why was this program not forecast last year?

Answer. Product Improvement test schedules, as well as Marine Corps Systems Acquisition Review Council (MSARC) milestones, did not mandate establishment of the AAV7A1 Product Improvement Program until FY87

Question. What is the total cost of this program? How many modifications kits will be procured?

Answer. The FY87 PresBud reflects the following Product Improvement Program (PIP) items:

	Qty	Millions
Upgunned Weapons Station	907	$84.129
Bowplane	1259	8.552
Applique Armor	189	14.421
Total		107.102

Additional product improvements are being considered in the FY88 programming process as well as additional procurement of Applique Armor for FY88 and FY89. These improvements are:

Automatic Fire Suppression System
Infantry Weapons Mount
Thermal Sight
Transmission/Hydrostatic Steer Unit (HSU)
NBC Protection
Advanced Propulsion System
AAVE7A1 (Engineer Variant)

Question. The Marine Corps has just finished spending hundreds of millions of dollars extending the service life of the LVT-7 vehicle and procuring new vehicles. Why is yet another modification program necessary?

Answer. The AAV7A1 Service Life Extension Program (SLEP) was a specified program to bridge the gap between the AAV7 and th LVT(X) scheduled for IOC during late 1980's and concentrated primarily on upgrading the reliability and durability of the vehicle. The LVT(X) program was cancelled in 1985. As a result, the AAV7A1 family of vehicles now has a forecasted exit date of 2003. This date is based on the presumption that the Advanced Assault Amphibian Program scheduled to start in FY91 will start on time and will meet the scheduled IOC of 1998-99. The modifications contained in the AAV7A1 product improvement program are necessary to improve and sustain the combat survivability of the vehicle.

Question. How much weight will these modifications add to the vehicles, and what impact will this have on mobility?

Answer. The added weight for all three of the improvements is approximately 5000 lbs. (UGWS 605 lbs, Bowplane 300 lbs, Applique Armor 4000 lbs). The vehicles mobility was designed to a 10,000 lb combat load. 10,000 load is rarely achieved due to the fact that the vehicle cargo space is limited in size. Thus the vehicle will cube out before it weighs out. The normal troop lift load is approximately 5000 lbs. Therefore, with all Mods fitted, the vehicle will be at its designed combat load. It is noted that waterborne mobility will actually increase with the use of the bowplane.

The additional product improvement scheduled for introduction during the FY88 programming process will not add any additional weight to the vehicle. It is anticipated that once the advance propulsion system is installed the total vehicle weight will be actually reduced.

Question. What testing has been done on each modification?

Answer. UGWS Developmental Testing/Operational Testing II completed 1983.

Bowplane Developmental Testing/Operational Testing I completed Dec 1985.

Applique Armor Developmental Testing/Operational Testing I completed Dec 1985

Question. What is the procurement strategy?

Answer. UGWS. Exercise 100 unit option against current procurement contract for FY87 funds. Recompete FY88, 89, 90 units during FY87 with contract award scheduled for 1st Qtr, FY88.

Bowplane. Scheduled for production during FY87 at Marine Corps Logistics Base, Albany.

Applique Armor. FY87 qty of 189 will be competitively solicited during July 86 with production contract scheduled for 1st Qtr, FY87.

Question. The Army has tested several approaches in applique armor. Which has the Marine Corps selected and why?

Answer. Applique Armor (P900) was selected by the Marine Corps for the following reasons: Similar to the armor used by Army M113 personnel carriers, meets immediate needs, weight is within the operating envelope of the vehicle, affordable cost, based on allowable weight, P900 armor meets current threat requirements.

TACTICAL VEHICLES

Question. The Army's fiscal year 1987 budget contains "new starts" for new families of trucks: the Family of Heavy Tactical Trucks, and the Family of Medium Tactical Trucks (FMTT). Procurement of these trucks is slated to begin in fiscal year 1989 and 1990 respectively. They will replace current tactical trucks in the 2½ to 15 ton payload range. Is the Marine Corps participating with the Army in the development of requirements for these trucks?

Answer. Yes, the Marine Corps is closely monitoring the development of the FMTT. Additionally, all requirements documents have been provided by the Army for Marine Corps review and comment. To date all Marine Corps requirements have been included in the Army's FMTT development. The Marine Corps has not identified a requirement for the FHTT.

Question. Does the Marine Corps intend to procure these trucks? If not, why not?

Answer. Plans are to commence procurement of the FMTT in the early 1990's in limited numbers when the M809/M939 series 5 ton trucks, currently satisfying this capability, begin to require replacement.

Question. The Army will shortly award a new multiyear contract for five ton trucks. Apparently, the Marine Corps has chosen not to participate in this procurement. Why? Are all your five ton truck requirements satisified?

Answer. In August 1984 the Army advised that they would be procuring the M939 series with a different engine. In September 1984 the Marine Corps identified to the Army the logistics problems associated with introducing a different engine into the Marine Corps 5-ton truck fleet. As a result, the Army negotiated an extension to the existing contract which will satisfy remaining Marine Corps 5-ton truck requirements in a single configuration, that is without the new engine.

Question. Why are no 5-ton trucks budgeted when last year you forecast that 329 would be funded in fiscal year 1987?

Answer. Marine Corps 5-ton truck requirements for FY87 have been satisfied through prior year savings and the FY85 National Guard and Reserve Equipment, Defense, Marine Corps appropriation.

Question. What is your view of the Army decision to add a central tire inflation system and a new engine to the 5-ton truck?

Answer. The Marine Corps is very interested in the Central Tire Inflation System (CTIS). However, since the majority of Marine Corps 5-ton trucks have already been fielded a field retrofitable CTIS would be more applicable to our requirements. In August 1984 the Army advised that they would be procuring the M939 series with a different engine. In September 1984 the Marine Corps identified to the Army the logistics problems associated with introducing a different engine into the Marine Corps 5-ton truck fleet.

As a result, the Army negotiated an extension to the existing contract which will satisfy remaining Marine Corps 5-ton truck requirements in a single configuration, that is, without the new engine.

Question. FY87 is the last scheduled Marine Corps procurement of the HMMWV. Will all your HMMWV requirements be satisfied with the FY87 procurement?

Answer. Yes, all identified HMMWV requirements will be satisfied with the FY87 procurement.

Question. How many M151 jeeps will the Marine Corps maintain in the inventory once all HMMWV's are fielded?

Answer. It is anticipated that all M151 jeeps in the Marine Corps will be replaced by the HMMWV. However, the Marine Corps is currently reviewing special operational contingency (SOC) mission scenarios in order to determine if limited retention of M151's is warranted.

Question. The budget includes $104 million for procurement of 1,210 Logistics Vehicles System (LVS) vehicles. Last year, you forecasted buying only 888 vehicles. Why has your budget for this item gone up in a year when budget constraints are forcing most programs to be funded below projection?

Answer. The FY87 LVS budget has increased from 88 front and rear units to 1210 front and rear units to procure 118 MK48/MK14 for transport, launch and recovery of the ribbon bridge and 191 MK14 for tandem-tow application to provide 1.3 days of supply (DOS) per day to the combat service support detachments (CSSDs), giving the CSSD 5 DOS at the end of 15 days (a surge capability of supply support in case of enemy interdiction of the lines of supply). In addition, 12 MK48 and 1 MK16 were added to support increased mission requirements. The remaining vehicles required to support the ribbon bridge and tandem tow requirements are programmed in FY88. The chart below provides a specific breakout of the increase.

	FY86 Projection for FY87	FY87 Ribbon Bridge Requirement	FY87 Tandem-Tow Requirement	Mission Requirement Increase	FY87 Projection for FY87
MK48	443	41	0	12	496
MK14	413	77	191	0	681
MK15	0	0	0	0	0

	FY86 Projection for FY87	FY87 Ribbon Bridge Requirement	FY87 Tandem-Tow Requirement	Mission Requirement Increase	FY87 Projection for FY87
MK16	32	0	0	1	33
MK17	0	0	0	0	0
Total	888	118	191	13	1210

Question. When Congress first considered funding for the LVS, the Marine Corps planned to procure a total of 1,603 vehicles for $217.5 million. What is the current procurement program, and what accounts for the change?

Answer. The FY83 Congressional Budget submission (P-40) reflected a procurement profile of 1603 vehicles for $217.5M. As noted on the P-40, the P-1 quantities reflected 1603 complete vehicle systems (1603 MK48 Front Power Units and 1603 MK14 Container Haulers). Requiremetns for the MK15 Wrecker/Recovery, MK16 Fifth Wheel, and MK17 Dropside Cargo with Crane were not included in the FY83 submission because they had not received Approval for Service Use (ASU) at that time. The MK15, MK16 and MK17 rear body units were approved for service use in August 1983. At that time the acquisition objectives (A/Os) for all LVS front and rear units were extensively reviewed. The review resulted in an net increase of 8 vehicles (total vehicles system) due to increased mission requirements. The current acquisition objective is as follows:

	A/O
MK48	1611
MK14	1382
MK15[1]	72
MK16[1]	280
MK17[1]	248

[1] Dollars in millions. Federal Excise Tax not included. Hardware costs only. (Cost of kits and Engineering Change Proposal contingency funds not included).

In addition, the Marine Corps is also considering procurement of 276 MK48's, 245 MK14's, 34 MK15's and 224 MK17's (a total of 779 front and rear units) to enhance the ability of direct support and general support artillery battalions to displace three times daily with all attendant munitions and equipment.

Question. The LVS is being procured under a five year multiyear contract which ends in fiscal year 1987. Why are you forecasting additonal procurement in fiscal year 1988?

Answer. Additional procurements in FY88 are to complete acquisition of 192 of 383 MK14 Container Haulers which, when used behind other LVS's in a tandem arragement, will provide a required enhancement of 1.3 days of supply per day to the Combat Service Support Detachments (CSSD's) build-up (providing a 5 day supply reserve at the CSSD's after 15 days of operations ashore to support sustained combat operations) and to complete acquisition of 113 of 154 MK48's and 77 of 154 MK14's required to transport, launch, and recover the Ribbon Bridge which is scheduled for fielding during 4th Qtr FY88. These modified MK48/MK14's will also have the capability to transport 7.5 tons of fill/engineer construction materials.

Question. How many vehicles, and at what cost, will be procured outside the multiyear contract, as options or modifications, or under a new contract? Show the data by fiscal year.

Answer.

	FY87[1]		FY88[1]	
	QTY	Amount	QTY	Amount
MK48	120	$14.2	57	$7.1
MK14	120	5.2	422	19.2
MK15				
MK16	5	.3		
MK17				
Total	245	19.7	479	26.3

[1] Dollars in millions. Federal Excise Tax not included. Hardware costs only. (Cost of kits and Engineering Change Proposal contingency funds not included).

The FY87 quantities will be acquired as options under the last year of the existing contract. FY88–FY90 quantities will be acquired under a new contract.

Question. What is the procurement strategy for vehicles bought outside the multiyear contract?

Answer. Justification for a sole source contract to Oshkosh Truck Corporation (OTC) will be pursued. A should-cost analysis of the existing contract was completed in January 1984 and it was determined that reverse engineering of the LVS would take four years. Reverse engineering would be required because the LVS is a Non-Developmental Item (NDI) and thus no reprocurement technical data package was included under the existing LVS contract. Inquiries concerning the cost of a reprocurement technical data package were rejected by OTC in 1985. Additionally, reverse engineering would raise patent infringement concerns with both OTC and Lockheed. Lockheed holds the patent to the LVS articulated steering system.

Question. Initial Production Testing for the LVS revealed problems in reliability, availability, and maintainability. As of a year ago, the Marine Corps had accepted no vehicles. What additional IPT has been conducted, when, and with what results?

Answer. At the end of Initial Production Testing, Reliability, Availability/Maintainability for the LVS was unacceptable due to failures identified in the rear wheel seals (52 of 117 failures), air and lubricant leaks, spring wear pads, and broken hose clamps. To verify the adequacy of contractor hardware changes in these areas, a 6,000 mile per vehicle verification test was conducted on three vehicles at the Nevada Automotive Test Center (NATC) from January through July 1985. The verification tests indicated that the contractor's hardware changes were in fact adequate and first article approval was granted 23 Jul 85.

Question. Has the LVS now shown that it meets all Marine Corps requirements? If not, please explain.

Answer. Yes, except for a problem regarding air transportability and lifting/slinging. The problem centers on the contractual requirement that the LVS be highway, rail, sea, landing craft and air transportable in accordance with the military specification. The contractor has developed a corrective hardware change and costs pursuant to that government approved change is being negotiated at this time.

Question. What additional cost, if any, has the Marine Corps had to pay in order to make the LVS meet requirements?

Answer. To date, the only additional cost the Marine Corps has had to pay to ensure that the LVS meets requirements was $125,000. This covered one-half the cost of the Verification Test to ensure the contractor corrective fixes applied near the end of IPT were adequate.

Question. Last year's budget backup sheets showed procurement of 772 vehicles in FY 1985 for $66.7 million. Why do the current backup sheets show that you will only buy 708 vehicles for the same funding level?

Answer. The 772 figure was an error. The original contract quantity for FY 1985, the third year of a five-year multiyear contract, was and still is a total of 708 front and rear units for $66.7 million.

Question. The fiscal year 1986 option was to be exercised in March. Show a comparison of the funding shown in the current P-22 with the actual contract and explain any differences.

Answer. The multiyear contract for the LVS has not been definitized. The base unit price has been established at $96,489 plus appropriate escalation based on the consumer price index. The estimate provided in the FY87 budget request reflect the latest adjustments for escalation. Other costs included in the total budget request of $69,148 thousand are support costs, engineering change proposals and federal excise tax. It is not anticipated that the contract will be definitized until December 1986.

Question. How many LVS vehicles have been accepted to date?

Answer. As of 6 May 1986, 388 vehicles have been accepted.

ARMORED BULLDOZERS

Question. For many years, the Army has been working to develop and procure an armored bulldozer to support the field combat engineers. In fiscal year 1987, the second year of procurement for the Army's Armored Combat Earthmover is budgeted. The current Marine Corps budget neither funds nor projects procurement of such a vehicle. However, we understand that such procurement is being contemplated. What are your plans?

Answer. The Marine Corps has planned procurement of a combat engineer tractor beginning in FY 1988. Our plans are to procure 257 vehicles over five fiscal years FY 1988-92.

Question. Why are you considering a British alternative to the Army's ACE? What are the advantages of the British Combat Engineer Vehicle over the ACE?

Answer. The British Combat Engineer Tractor (CET) is a fielded system, tested in combat in the Falkland Islands. It is more maneuverable in its swimming mode (due to its water jet propulsion system) than the ACE and, therefore, more suitable for the amphibious role of the Marine Corps. The excavation capability of the CET is greater than that of the ACE, although it lacks the scraper bowl incorporated in the ACE.

The CET has the potential for greater battlefield utility through incorporation of Preplanned Product Improvement (P3I) items which can include a track-width mine plow, angle dozer blade, multi-purpose bucket, ripper attachment, weapons mount and trencher attachment. The CET's rocket propelled anchor is used to enhance the vehicle's slope climbing ability to include river crossing operations and bridge construction site preparation. This capability allows the CET to prepare egress routes on the far shoreline, thus enhancing the mobility of vehicles exiting the water and climbing the river bank in fording operations.

The CET has a two man crew, which increases its probability of mission accomplishment and also enhances the vehicle's overall productivity. Both crew members can perform all vehicle functions.

Question. What testing is the Marine Corps doing of the CEV and the ACE?

Answer. The Marine Corps has tested the ACE on two previous occasions and has continued to monitor the Army's program. Although the Marine Corps conducted limited performance testing of the ACE, the main goal of USMC testing was to examine those Marine Corps requirements not tested by the Army, i.e., amphibious compatibility, etc. A one year evaluation of the British CET began in 1985 and will be completed in September 1986. Testing of the CET during FY 86 includes performance, reliability, durability and maintainability. Amphibious and aviation compatibility has been tested as well as climatic impact on the CET.

Evaluations of the two systems will serve to confirm performance data and allow the Marine Corps to assess amphibious compatibility. Comparison of test results will allow better definition of Marine Corps requirements.

Question. What mission role do you see for a Marine Corps armored bulldozer?

Answer. Armored Combat Excavator (CE) type vehicles will be employed by units attached to or in direct support of non-mechanized combat and mechanized combat elements of a Marine Air/Ground Task Force. The CE's support capabilities will provide survivability enhancement, countermobility and mobility enhancement support in the zone of action. The CE requires armor protection and mobility equivalent to that of mechanized forces to ensure continued battlefield support. The CE must also be capable of improving and repairing roads, preparing and improving VTOL sites, as well as creation of deliberate protective positions for vehicles, personnel, command/control and communication facilities. In addition, the CE will be employed by artillery units to provide firing positions and ammunition storage as they leap-frog forward in support of infantry operations. The combat service support engineers will possess some CE's for use in reinforcing combat support missions when augmenting combat support operations. Within the Marine Aircraft Wing the CE will provide engineers with the ability to prepare aircraft revetments, ammunition storage areas, provide rapid runway repair and assist in the clearance of unexploded submunitions.

Question. When do you anticipate budgeting for procurement?

Answer. Budgeting for the CET will begin in FY 1988 and continue through FY 1992.

Question. How many will be bought, and at what cost?

Answer. 257 vehicles will be procured for an estimated hardware cost of $278 million.

MARINE CORPS BRIDGES

Question. Last year, $11.1 million was provided for the first year of a three year $63 million procurement of medium girder bridges. This year's budget shows no procurement beyond fiscal year 1986. What happened?

Answer. The FY87 and FY88 buys of the Medium Girder Bridge (MGB) were intended to support Marine Corps wet gap crossing requirements when combined with a Floatation Supplement Set (FSS). The FSS proved unsatisfactory. Concurrently, the Marine Corps reexamined all aspects of bridging requirements, both near and far term. It was determined that the urgent Wet Gap requirement could be satisfied with the Army's Improved Float Bridge (Ribbon Bridge). Accordingly, only those quantities of MGB's required to support the Marine Corps dry gap requirements are now budgeted. There are no FY87 or 88 requirements for the MGB.

Question. When do you expect to obligate the fiscal year 1986 funding?

Answer. It is anticipated that the fiscal year 1986 funds will be obligated in September 1986.

Question. The fiscal year 1987 budget includes $6.2 million for procurement of 168 "wet gap bridge systems". A requirement of $5.4 million is projected for fiscal year 1988. What is the nature of this equipment, and why was this procurement not forecast last year?

Answer. The wet gap bridge system is the Army's standard floating Ribbon Bridge. The Marine Corps requirements for a wet gap bridge system was to be satisfied by the Floatation Supplement Set tested in conjunction with procurement of the MGB. During R&D testing the Floatation Supplement Set was determined to be unsatisfactory for the Marine Corps. Thus, the FY87 and FY88 buys of the Medium Girder Bridge which included the Floatation Supplement Set were deleted. The Army's Ribbon Bridge was selected to fill the requirement. This procurement was not forecasted last year because the completion of R&D testing and the decision to procure the Ribbon Bridge occurred subsequent to last year's budget request. Marine Corps approval for initiation of the Ribbon Bridge procurement and the Army's present contract for the bridge system required the Marine Corps to begin its procurement in FY87.

Question. Last year, Congress funded a one time procurement of $5.2 million for 21 bridge erection boats. It now appears that the 21 bridges will be bought for only $2.6 million, but that additional boats are being procured in fiscal year 1987. What caused this miscalculation of your budget and requirements?

Answer. The FY86 budget submission was based on an estimated price developed by cost analysis conducted by the Army. Basis of the analysis was the contract cost of the previous model boat, cost of changes, upgrades and improvements plus escalation. When the contract was awarded, the price was dramatically lower than estimated. Subsequently, the decision to procure the Ribbon Bridge to accommodate the Marine Corps wet gap bridging requirement resulted in an increase in the number of boats required.

Question. Why do you not use fiscal year 1986 savings to procure additional boats—since you now claim to need them—rather than reprogram the $2.638 million?

Answer. FY86 funds were initially reprogrammed to cover projected costs increases in other programs. Subsequently, these savings must be applied to help offset the effects of the FY86 Gramm-Rudman reduction.

[CLERK'S NOTE.—End of questions submitted for the record.]

Mr. CHAPPELL. Thank you very much. You have done a good job for us. We are happy to have you with us today.

The committee will stand adjourned until 10:00 a.m. tomorrow morning.

THURSDAY, MARCH 13, 1986.

NAVY SHIPBUILDING AND SHIP REPAIR PROGRAM

WITNESSES

HON. EVERETT PYATT, U.S. NAVY, ASSISTANT SECRETARY OF THE NAVY (SHIPBUILDING AND LOGISTICS)

VICE ADMIRAL J. METCALF III, U.S. NAVY, DEPUTY CHIEF, NAVAL OPERATIONS SURFACE WARFARE

VICE ADMIRAL W.H. ROWDEN, U.S. NAVY, COMMANDER, NAVAL SEA SYSTEMS COMMAND

INTRODUCTION

Mr. **MURTHA**. Welcome, Mr. Secretary.

The Committee will come to order.

This afternoon, the Committee will hold a hearing on the Navy's $11 billion shipbuilding program.

We welcome Mr. Everett Pyatt, Assistant Secretary of the Navy for Shipbuilding and Logistics; Vice Admiral Joseph Metcalf, Deputy Chief of Naval Operations for Surface Warfare; and Vice Admiral William H. Rowden, Commander, Naval Sea Systems Command.

Today the Committee intends to cover a wide variety of shipbuilding programs and issues including: T-AGOS Ocean Surveillance Ships; Mine Countermeasures Ships; SSN-21 The DDG-51 Destroyer; overhaul and repair program; and The Mariner Fund.

Admiral Rowden, since this is your first appearance before the Committee in this capacity, your biography will be made part of the record.

You may begin by summarizing your statements, and your complete statements will be made part of the record.

SUMMARY STATEMENT OF ASSISTANT SECRETARY PYATT

Mr. **PYATT**. Yes, sir, I have a couple of points I would like to make.

First, there has been some concern about the affordability of a 600-ship Navy. During the last four years, the ship portion of the defense budget has fallen from 4.3 to 3.5 percent and that leads us to believe that the path that we have been on, designing ships, holding costs down, promoting competition, clearly laid a path of showing the long-term affordability of a 600-ship Navy.

In fact, in 1983, 1984 and 1985, the shipbuilding program is $4.4 billion currently under the amount the President requested, and some has come out of the appropriations process, and the negotiations have gone on.

Others have come out in the contracting process, and money has been used for MX, for Navy shipbuilding program, and currently, a big part is held in that $5 billion fund, and $800 million is held for the Merchant Mariner Fund.

We think what we have been doing is on the right path.

Last year, I described several things that we are trying to do to improve our acquisition process, and this year, I will focus on specification control, because that is the next step towards increased control of costs and putting the emphasis on ourselves to have only what we have to have in a ship design and trying to design a ship so industry can build it in a most efficient way. These continuing efforts, first practiced under DDG–51, currently in practice on the SSN–21 and planned for the AOE class.

Competition: We are now at the stage where 86 percent of our shipbuilding dollars are competitive. Only one ship is not, Trident. We are trying to make that competitive also, but we are not there yet.

The shipbuilding program is being described to you, and it is in the budget. You know what that is.

Our biggest uncertainty right now is how to cope with the Gramm-Rudman-Hollings requirements. In some of our shipbuilding programs, we have found enough money still in the budget, and instead of savings this year, it would be applied against Gramm-Rudman.

In existing programs, where we had unobligated balances, because of good business practice not to buy equipment until you need it, we found ourselves taking a loss that we are not quite sure how to make up in the future.

It will depend upon future financing, but we will have to work it out with future reprogrammings. The other component that occurred in the shipbuilding account, which as far as I know exists in no other account, is that we have a long-term contract, with escalation clauses, and that are carried unobligated, even though it is an obligation for payment.

We also took hits against those lines which would possibly have some future impact depending on future inflation.

The last issue that I had, and has been mentioned in all other hearings, is the situation on the battleship and the mine countermeasure ship.

Last year, the authorization process gave us a stimulus to work on the battleship that says, if you save enough money to pay for it, you can have it.

We took that as a challenge, and we saved that amount.

In the appropriations process, we wound up with new money for the reasons of the Congress, and that is fine, too. In the current situation, we have twice as much money that we need to do the battleship, and I hope that some compromises can be achieved that will resolve that.

The second issue that we have in the mine countermeasure ship is the appropriation process. By the time we got to appropriations last year, it was clear we had an overrun on those two ships, the appropriations committees added funds however, it was not authorized, and we will soon be in a situation where we will have to stop work, and can't pay our bills.

Currently, we are moving money around to keep them going, because we know that mine countermeasure ships are needed. Congress has supported our trials and tribulations in the past.

That summarizes my statement.

[The biography of Admiral Rowden and the statements of Mr. Pyatt and Admiral Metcalf follow:]

VICE ADMIRAL WILLIAM H. ROWDEN, USN, COMMANDER, NAVAL SEA SYSTEMS COMMAND

Vice Admiral William H. Rowden was born in Woodsville, New Hampshire, on 12 May 1930. He attended the U.S. Naval Academy, graduating with the class of 1952. After graduation he was assigned to USS YARNALL (DD 541), a FLETCHER class destroyer, operating with the U.S. SEVENTH Fleet in support of United Nations actions in Korea. In 1954 he became the Executive Officer of the coastal minesweeper, USS CORMORANT (MSC 122). He relieved as Commanding Officer in CORMORANT in late 1955 taking that ship to her new homeport in Sasebo, Japan, from Long Beach, California.

An assignment to the Bureau of Naval Personnel in Washington, D.C., followed before returning to sea as Executive Officer of USS LESTER (DE 1022). He earned a Bachelor of Science Degree in Electrical Engineering in 1963 from the U.S. Naval Postgraduate School in Monterey, California. He then assumed command of USS BAUER (DE 1025) which operated in the South China Sea as a unit of the U.S. SEVENTH Fleet during the early part of the Navy's involvement in the Vietnam conflict.

He served as Personal Aide to the Commander in Chief Pacific from 1965 to 1967 and then spent six months as a student at the Armed Forces Staff College in Norfolk, Virginia, before assuming command of USS LYNDE MCCORMICK (DDG 8). Following an assignment to the Naval Ordnance Systems Command in the Surface Missile Systems Project in Washington, D.C., Vice Admiral Rowden returned to sea in August 1973 as Commanding Officer, USS COLUMBUS (CG 12). From USS COLUMBUS, Vice Admiral Rowden was assigned to the staff of the Chief of Naval Operations in 1974. He served for two years in the Office of the Deputy Chief of Naval Operations (Surface Warfare) in the Surface Combat Systems Division (OP-35).

Vice Admiral Rowden then commanded Cruiser-Destroyer Group THREE from July 1977 to May 1979. He returned to the Office of the Chief of Naval Operations in June 1979. He became Deputy Chief of Naval Operations (Surface Warfare) in September 1980. He commanded the United States SIXTH Fleet in the Mediterranean from June 1981 until July 1983. During this period he was also assigned to NATO as Commander Striking and Support Forces, Southern Europe. He assumed command of the Military Sealift Command from August 1983 until June 1985. He became Commander, Naval Sea Systems Command, on 17 June 1985.

His decorations include the Navy Distinguished Service Medal (with gold star in lieu of second award), Legion of Merit, Bronze Star, and Meritorious Service Medal.

He is married to Sarah Sumner Rowden of Rockford, Illinois. The Rowdens have a daughter, Jane, who lives in Portland, Oregon, and two sons, Tom and John, both Naval officers.

Mr. Chairman and distinguished members of the committee. I am Everett Pyatt, Assistant Secretary of the Navy (Shipbuilding and Logistics).

I am pleased to appear before this committee to discuss the Navy Shipbuilding and Conversion Program, our progress in constructing the 600-ship Navy, and the President's Budget Request for Fiscal Year 1987. Ships are becoming a decreasing portion of the defense budget, having fallen from 4.3% in FY 81 to 3.5% in FY 87. Clearly, a 600-ship Navy is affordable.

The 600-ship Navy, with the 15 carriers called for by our Maritime Strategy, will be in place by the end of this decade. The fleet will have increased from 479 battle force ships in 1979 to 553 by the end of this year. This level will be achieved with funds already authorized and appropriated. As of 1 February 1986, there were 84 naval ships under construction, conversion, or reactivation at 17 different U.S. shipyards.

Concurrent with increasing the size of the Navy, we have significantly reduced acquisition costs. By improving our acquisition management, we have saved the taxpayers billions of dollars. The FY 1983, 1984, and 1985 shipbuilding programs are a total of $4.4 billion under the President's Budget Requests.

In my appearance before this committee last year, I described the major elements of our acquisition strategy; design and cost stability, competition, and increased emphasis on developing acquisition professionals. These precepts now permeate daily decisionmaking throughout the Navy's acquisition community. Today, I want to go further and discuss our acquisition policy, the results of competition, our achievements in acquisition streamlining, and highlight the major programs in our Fiscal Year 1987 request.

Acquisition Improvement

I would like to make special note of the steps taken by the private shipyards of the United States to improve their capabilities to respond to the Navy's needs. Their cooperation and assistance has been instrumental in achieving our acquisition goals. In addition, the private yards have taken steps of their own, including capital investment, to improve productivity and reduce costs.

Ships are now constructed of larger, more fully completed modules, resulting in faster, less expensive construction. New and improved facilities have improved yard efficiency and productivity and have reduced construction times. The private yards have learned from their strongest competitors, the Japanese yards, new and better production and production planning techniques.

All these efforts by the private yards are evidence that the U.S. shipbuilding industry wants to improve its product and reduce the costs. We are most pleased by these developments and look forward to continuing a working relationship that is beneficial to both Navy and the industry.

Our Navy shipyards are large businesses in their own right. If they were a private corporation, they would rank in the Fortune 100 based on both revenues ($4B per annum) and number of people employed (79,000). We sponsored a major review of our shipyard operations in our continuing effort to ensure effective and efficient business practices are in place in all our activities. As a result, we have reduced funding by $500M by reducing overtime and overhead costs and improving material and labor utilization practices. Furthermore, we are now moving into our second year of public/private competition which will serve as a major incentive for improved public yard performance. Congress directed that, in FY 1986, four or more overhauls be competed between the public and private sectors. We have doubled that amount, eight ships have been designated for competition, including two nuclear submarines. We expect this competitive pressure to further reduce the cost of overhauls/repairs in the Naval shipyards. I might add that, in the general area of ship maintenance, we have been able to reduce the amount of "growth" work in our maintenance availabilities; that is, we have been able to minimize the impact of "low-ball" bidding. Under fixed-price bidding, we now bring overhauls in under the government estimate, even including the growth work that evolves. Increased management attention will help us do even better in the future.

Our military emphasis is changing from force building to force modernization, readiness, and sustainability. Our primary business mission is to achieve our force level, modernization, readiness, and sustainability goals at reduced cost. We believe our acquisition policies will achieve that end.

Competition

Competition is the cornerstone of our acquisition strategy. It has reduced our acquisition costs and it will continue to reduce costs.

In FY 1980, about 15 percent of Navy ship construction and conversion dollars were competitively awarded. In FY 1985, that percentage increased to over 86 percent. In FY 1986 and beyond, we intend to compete all of our ship construction and conversion, with eventual inclusion of the TRIDENT submarine.

Competition continues to work to save the taxpayers money. The FY 1983-FY 1985 shipbuilding programs are currently $4.4B under the President's budget.

Acquisition Streamlining

I reported to this committee at this time last year that the Secretary of the Navy had appointed an individual to oversee our initiatives to reduce or cancel technical and acquisition specifications for systems that have been over-specified. I am pleased to report that major strides have been taken during this first year.

The acquisition streamlining objective is to identify, develop, and implement improvements in all aspects of acquisition that will result in a reduction of the time and cost required to obtain quality weapon systems, facilities, and equipment.

Our initial thrust has been to streamline contract requirements. In particular, we have been taking a hard look at our specification base which includes approximately 15,000 documents. We want to ensure that only up-to-date, technically correct and cost-effective specifications are included in our contracts. For example, we have launched attacks on the specification used for ship construction to identify non-cost-effective requirements. We are progressing well into the areas of heating, ventilation, air conditioning, habitability and compressed air systems and will continue until all areas have been thoroughly reviewed and cost-reducing change implemented.

We have instituted policy to avoid premature application of specifications and standards. Prior to full-scale development, all specifications and standards are cited for guidance only. We are specifying system level requirements in terms of mission performance instead of the "how-to" specifications or standards. During full-scale development, we have limited automatic chain referencing of specifications. Ultimately, this process will result in production contracts that have been rigorously scrubbed of any unnecessary specifications or "gold-plated" requirements, while permitting industry flexibility to propose innovative, cost avoiding alternatives. By involving industry early in our design process, we are avoiding downstream production problems which can result in cost growth. Examples of this early industry involvement are the DDG-51 Guided Missile Destroyer and the AOE-6 Fast Combat Support Ship. In the case of DDG-51, the design is a product of early industry involvement to prove its producibility. The AOE-6 design process has included five separate design reviews with active participation by shipbuilders and designers. All shipbuilding programs currently under development will receive this special emphasis on streamlining. This includes our more sophisticated combatants such as the SSN-21 submarine program.

Where appropriate, we are using performance specifications for production contracts. An example of this is the contract for two T-AGS Ocean Survey ships awarded last year to Bethlehem Steel. We used a Circular of Requirements to procure these ships - in effect, a performance spec - which resulted in a very competitive award and significant savings to the Government.

We know our success in achieving a combat-ready 600-ship Navy, in the face of budget realities confronting our nation, makes initiatives such as streamlining imperative. The next step in cost reduction will come from this effort.

FY 1987 SCN Program

Now I would like to discuss some highlights of the 1987 Shipbuilding and Conversion Program. The FY 1987 Navy budget includes funding for acquisition of 21 new ships and the conversion of three. The majority of this construction and conversion is for replacement and modernization rather than force expansion. Prior year programs provided the bulk of funding for establishment of the 600-ship Navy which will soon be a deployed reality. Our programs are now designed to assure that the 600-ship Navy will continue to consist of the most capable and modern ships carefully aligned to meet our worldwide commitments.

The FY 1987 program includes funds for the fourteenth TRIDENT submarine, four LOS ANGELES (SSN-688) class nuclear attack submarines, two TICONDEROGA (CG-47) class cruisers, three Arleigh Burke (DDG-51) class destroyers, four coastal minehunters, two fleet oilers, three TAGOS support ships, one fast combat support ship (AOE), and one oceanographic ship (AGX). Advance funding is requested for the new attack submarine (SSN-21) planned for FY 1989. Funds are also included for conversion of two T-ACS auxiliary crane ships and the jumbo conversion of one oiler (AO).

Balanced Budget and Emergency Deficit Control Act of 1985

The FY 1986 appropriation levels for the Department of Defense were well below the President's request and left no room for additional reduction. We are now facing the Gramm/Rudman/Hollings deficit reductions. We must further improve the way we do business to help prevent further budget cuts from devastating our defense posture.

I wish to note that the Gramm/Rudman/Hollings reductions are causing problems, not all of which are well defined. In programs with small unit buys and long-term outlays such as shipbuilding, successive annual applications of Gramm/Rudman/Hollings will leave us short of the funds required to complete the final units. This is probably true for most of the ships under construction now, because unobligated balances necessary to complete the ship, under the full funding policy, are being cut. Although it is early in the year, the FY '86 and prior year SCN programs may be about a half billion dollars underfunded as a result of this legislation. This is after we remove all program management reserves and escalation savings. The problem would be eased if we had greater flexibility to move funds between the individual shipbuilding program accounts and across fiscal years. Furthermore, the cuts make it highly important that shipbuilders meet the target prices they contract for, because there are no funds beyond that level.

Mr. Chairman, that concludes my statement. VADM Joseph Metcalf, Deputy Chief of Naval Operations (Surface Warfare), and VADM William Rowden, Commander, Naval Sea Systems Command, are with me today to provide further details of the shipbuilding program.

STATEMENT OF VADM JOSEPH METCALF III, U.S. NAVY
DEPUTY CHIEF OF NAVAL OPERATIONS
13 MARCH 1986

Mr. Chairman and distinguished members of the committee, I am Vice Admiral Joseph Metcalf, III, USN, the Deputy Chief of Naval Operations for Surface Warfare and the sponsor for the Shipbuilding and Conversion, Navy (SCN) Appropriation.

It is my privilege today to present to you the Navy's SCN budget request for Fiscal Year 1987 and to review our five year shipbuilding plan. The ships we are requesting in FY 1987 will sustain and upgrade the capabilities of the Fleet to enable us to carry out the Maritime Strategy into the next century.

Ultimately, our need for a Navy is driven by the threats to our interests as a maritime nation. Since the earliest days of the Republic, the Navy has maintained the peace, fought our enemies and protected American security. With our rise to a global power, these interests expanded to include the protection of the entire Free World and the missions of the Navy and its size increased accordingly.

MARITIME STRATEGY

VG-1 Today, we have formal defense treaties with 43 nations, only two of which share a land border with us. In addition, there are a number of nations outside the formal alliance system with which we have common military and economic interests. The Maritime Strategy takes these commitments and the requirements of coalition warfare and combined operations into account. The goal of the Maritime Strategy is to deter war, but if deterrence fails we must be able to terminate any conflict on favorable terms. In fact, deterrence rests on our warfighting capability. Conflict can best be prevented by convincing any potential adversary that he cannot hope to achieve any worthwhile objective by aggression.

VG-2 Maritime forces have roles across the entire spectrum of conflict, from peacetime presence to nuclear war. Today, as every day, the Navy is at sea around the world, protecting our overseas interests. Wherever needed, the Navy provides the balanced forces required to permit the United States and its allies to enjoy the free use of the Sea Lines of Communication during what the Chief of Naval Operations has described as the "era of violent peace." At the high end of the conflict spectrum, our strategic submarine force provides for crisis stability and deterrence of global war.

We believe that a 600-ship Fleet is the minimum force necessary to carry our the Maritime Strategy. It is a prudent risk force.

THE 600 SHIP NAVY

VG-3 Thanks to your support our Fleet has grown from 491 ships in 1981 to 542 at the beginning of this fiscal year. We will reach the 600 ship requirement by the end of the decade when the ships presently under construction join the Fleet. The Fiscal Year 1987 request will sustain and modernize the Force by replacing aging, marginally capable units which are reaching the end of their service lives with modern units that can counter the increasing Soviet threat beyond the year 2000.

In 1985 we delivered 19 new and five converted ships. These included two TRIDENT submarines, three LOS ANGELES Class nuclear attack submarines, two TICONDEROGA Class guided missile cruisers, five OLIVER HAZARD PERRY Class guided missile frigates and the lead ship of the Landing Ship Dock (LSD-41) Class, USS WHIDBEY ISLAND. USS FORRESTAL (CV-59) completed the Service LIfe Extension Program (SLEP). In addition, four TAGOS-1 Class ocean surveillance ships, two ARS-50 salvage ships, three Fast Sealift Ships (FSS) and an auxiliary crane ship (TACS) were added to the Fleet.

VG-4 By the end of this fiscal year our Battle Forces will grow to 553 units.

VG-5 Our ultimate naval force objectives for the 600-Ship Fleet are:

- 15 Carrier Battle Groups
- 4 Battleship Battle Groups
- 100 Nuclear Attack Submarines
- Amphibious ships for the Assault Echelons of a Marine Amphibious Force (MAF) and a Marine Amphibious Brigade (MAB)
- 14 Mine Countermeasures Ships
- 10 Underway Replenishment Groups
- 7 Convoy Escort Groups

VG-6 Some people have questioned the affordability of the 600 ship force. I believe that we must sustain and continue to modernize the Fleet. If we fail to do so, history will judge that our failure was due to a lack of will, not a shortage of resources. In fact, aggressive management initiatives, a favorable marketplace and lower than anticipated inflation have drastically reduced our estimates of the level of investment required. This viewgraph (Viewgraph 6) compares common years of the Navy's shipbuilding plans over the past five years. The Fiscal Year 1983 request planned for a shipbuilding request of more than $28 billion. By last year the estimate for Fiscal Year 1987 was reduced to less than half and this year's request is $2.688 billion below that. The FY 1987 SCN request represents negative real growth for the second straight year and we envision only modest increases will be required over the next five years. By the end of this period, we predict that three percent real growth will be adequate to sustain, modernize and operate this force indefinitely.

A word of caution is in order. In actions on the Fiscal Year 1986 SCN request, approximately $2 billion was transferred from prior year programs. We have fully reflected the savings expected from competition and the lower inflation indices in our FY 1987 estimates. It would be unreasonable to expect that savings of this magnitude can be achieved in the future. I am particularly concerned about the cumulative effect of reductions of funds for ships which have already been appropriated. Further cuts could jeopardize the executability of our prior year programs.

VG-7 NAVY FIVE YEAR SCN PLAN - FISCAL YEAR 1987-1991

This year we are requesting authorization and
appropriation of $11,046.2 million for the construction of 19
new ships and the conversion of three others. The five year
VG-8 shipbuilding plan projects a total of 106 new construction
ships and 20 conversions over the period from Fiscal Year
1987 through 1991. This plan reflects a continued commitment
to maintain the momentum of the building program initiated
five years ago and will ensure that the Navy has the
necessary Battle Forces to carry out the Maritime Strategy
and to meet our national requirements.

The principal changes from the Fiscal Year 1987 column of last year's request include:

- Deletion of the Battleship WISCONSIN as a result of its appropriation in FY 1986.
- Reduction of the request for TICONDEROGA (CG-47) Class cruisers from three to two.
- Increase in the request for ARLEIGH BURKE (DDG-51) Class destroyers from two to three.
- Delay of the AVENGER (MCM-1) class.
- Acceleration of the TAGOS oceanographic research ships.
- Acceleration of the AO-177 Jumboization Program from FY 1988 to 1987.
- Restructuring of the Landing Craft Air Cushion (LCAC) profile.

I will now give you a description of each program for which we are requesting funding.

STRATEGIC SUBMARINE FORCE

We presently have 37 strategic submarines (SSBNs) in the Force, including 30 submarines of the LAFAYETTE, JAMES MADISON AND BENJAMIN FRANKLIN classes and seven TRIDENT I C-4 configured OHIO Class submarines. Twelve ships of the earlier classes have been converted to carry the TRIDENT I missile.

The SSBNs comprise the most secure element of our strategic triad and provide the basic underpinning of our deterrent strategy. Their survivablity under all conditions of war initiation promotes stability in a crisis and their endurance provides for control of escalation in a conflict.

VG-9 OHIO Class Submarine

We plan to maintain a building rate of one TRIDENT submarine per year throughout the five year defense plan. The ultimate force level objective is undetermined.

The first eight ships of the class will carry 24 TRIDENT I C-4 submarine launched ballistic missiles. The changeover to the more potent TRIDENT II D-5 missile will commence with the ninth ship, which was funded in Fiscal Year 1981. In the early 1990s we plan to begin to reconfigure the first eight ships to carry the TRIDENT I missile.

This year we are requesting $1509.1 million for the 14th OHIO class submarine. This includes $146.4 million for long lead materials for follow-on ships.

ATTACK SUBMARINE FORCE

The Soviet submarine force is the largest in the world, numbering some 300 active units of two dozen classes. Nearly half of the force is nuclear powered and this percentage is expected to increase in the years ahead as heavy Soviet investment in submarine construction continues to bear fruit. Currently, the Soviets are testing or building nine different classes of submarines. Four classes of attack submarines have achieved initial operational capability since 1983.

Countering this formidable threat is the primary mission of the U.S. nuclear attack submarines. The overall force level objective remains at 100 ships. There are currently a total of 96 nuclear attack submarines in the Force. Of these, 33 are LOS ANGELES (SSN-688) Class submarines. Eighteen additional units of this class have been authorized and appropriated through 1986 and 15 of these are under contract.

We will introduce the SEAWOLF (SSN-21) Class submarine during the next five years in order to maintain our qualitative lead over the Soviet submarine force.

VG-10 LOS ANGELES (SSN-688) Class Submarine

This year's budget request includes $2332.6 million in full funding for four more improved SSN-688 Class submarines and long lead material for the FY 1988 and 1989 ships. These ships incorporate the Vertical Launch System (VLS) for TOMAHAWK as well as enhanced arctic capabilities, improved quieting and improved combat control systems.

VG-11 SEAWOLF (SSN-21) Class Submarine

The budget includes $454.3 million in advance procurement for the lead ship of the SSN-21 Class. This new class is designed to counter the rapidly increasing capabilities of the Soviet submarine force. It is a quieter, faster and more heavily armed submarine designed to deploy to forward ocean areas to seek out and destroy enemy submarines and surface ships and attack land targets. The many new features of this submarine represent a quantum improvement over earlier designs. Recent anaylsis predicts greatly improved exchange ratios against the projected threat. We plan to request full funding for the lead ship in the class in Fiscal Year 1989.

AIRCRAFT CARRIERS

Our 13 aircraft carriers are deployed worldwide in support of our national commitments. They are capable of executing response options ranging from peacetime presence through general war. Together with their embarked air wings, the carriers have vital roles in strike, anti-surface, anti-air and anti-submarine warfare across the full conflict spectrum.

As I indicated earlier, we are building to a force level of 15 deployable aircraft carriers. We expect to attain 14 by the end of next year and 15 by 1990. Three NIMITZ class nuclear powered carriers are under construction at Newport New Shipbuilding Company. The first of these, USS THEODORE

ROOSEVELT (CVN-71) is scheduled for delivery in September of this year. One conventionally powered carrier, USS INDEPENDENCE (CV-62), is undergoing service life extension at Philadelphia Naval Shipyard. This program will add approximately 15 years to the service life of our older carriers.

VG-12 Carrier Service Life Extension Program (CV SLEP)

Last year the Congress appropriated $52.0 million in advance procurement for the USS KITTY HAWK (CV-63) SLEP. During the budget formulation this past spring, we moved the start of KITTY HAWK from Fiscal Year 1987 to 1988. This year we are requesting $83.5 in additional advance procurement to support the FY 1988 start.

SURFACE COMBATANTS

For many years the Soviets were expanding their surface forces both qualitatively and quantitatively while U.S. and allied force levels dwindled. The shipbuilding programs of the last five years and the warfighting improvements we have made to our existing ships have reversed these adverse trends. The AEGIS Combat System and Vertical Launch System VLS) have revolutionized surface warfare. The AEGIS System can make lightning fast decisions based on our planning and simultaneously engage numerous air, surface and subsurface contacts. The dramatic increase in the offensive power of our surface combatants has expanded their contribution to our overall warfighting capabilities.

Our minimum force level objective is four reactivated battleships, 33 guided missile cruisers, 67 guided missile destroyers and 101 frigates. We are constantly reviewing these force level requirements in the context of our Maritime Strategy as the threat evolves. Presently our most severe shortfall is in guided missile destroyers.

VG-13 TICONDEROGA (CG-47) Class Guided Missile Cruisers

During Fiscal Year 1985 USS YORKTOWN (CG-48), the second ship of the TICONDEROGA class, deployed on extended operations. USS VINCENNES (CG-49) was commissioned and USS THOMAS S GATES (CG-51), USS BUNKER HILL (CG-52) and USS MOBILE BAY (CG-53) were launched. USS VALLEY FORGE (CG-50) was commissioned in January 1986. Twelve additional ships are under contract.

In FY 1987 we are requesting $1924.3 million in full funding for two more CG-47s. This includes $10.5 million for advance procurement for the Fiscal Year 1988 ships. The eight cruisers we plan to procure over the next four years will complete the class of 27 ships.

The last CG-47 baseline will incorporate all the proven capabilites of the AEGIS Combat System along with LAMPS III, the Vertical Launch System (VLS), TOMAHAWK missiles, the SQQ-89 ASW Upgrade, the SPY-1B Radar, the SQS-53B Sonar and improved computers.

VG-14 **ARLEIGH BURKE (DDG-51) Class Guided Missile Destroyers**

The ARLEIGH BURKE Class DDGs are intended to replace the aging DDG-2 and DDG-37 Class guided missile destroyers which are reaching the end of their service lives.

The DDG-51 will be the most powerful class of destroyers ever to go to sea. It will carry the AEGIS Combat system, the VLS, TOMAHAWK, HARPOON and STANDARD (SM-2) missiles as well as a 5"/54 caliber Lightweight Gun, the Close in Weapon System (CIWS), ASROC and anti-submarine torpedoes. This ship also will incorporate enhanced survivability and damage control features.

The Congress funded the lead ship in the class in Fiscal Year 1985. In FY 1987 we are requesting $2527.8 million in full funding for three ships. The amount includes $79.8 million in advance procurement for the Fiscal Year 1988 ships.

We plan to procure 17 DDG-51's over the period 1987 through 1991. The present force level objective for this class is 29 ships.

AMPHIBIOUS WARFARE SHIPS

Amphibious warfare ships are uniquely designed to support assault from the sea against defended positions ashore. They must be able to sail in harm's way and provide a rapid buildup of combat power ashore in the face of opposition. The United States maintains the largest and most capable amphibious force in the world and the current building program will further enhance that capability as newer units join the Fleet.

In 1981 the lead ship of the WHIDBEY ISLAND (LSD-41) Class was appropriated and that ship was delivered in January of last year. A total of eight LSD-41s have been funded to date.

The first ship of a three ship multi-year LHD-1 procurement was approved last year. This class in intended to replace the aging LPH Helicopter Assualt Ships. The LHD-1 Class is designed to be the most versatile amphibious ship ever built. A modification to the highly successful LHA class, the LHD will greatly increase our lift capacity, provide a flight deck for helicopters and vertical/short takeoff (VSTOL) aircraft and a large well deck for conventional landing craft and the Landing Craft Air Cushion (LCAC). It will have the capability of performing secondary power projection and sea control misions.

Our goal is to attain sufficient amphibious ships to carry the assault echelons of a Marine Amphibious Force (MAF) plus a Marine Amphibious Brigade (MAB) by 1996. This represents a delay of two years in attainment of our lift objective, chiefly because of fiscal constraints.

The FY 1987 budget request includes no new LCAC. These craft are undergoing extensive operational tests and engineering enhancements to improve reliabiality.

VG-15 WASP (LHD-1) Class Amphibious Assault Ships

In FY 1987 we are requesting $232.0 million for long lead material for LHD-3 and LHD-4. We plan to build a total of three ships of this class over the five year plan.

VG-16 AUSTIN (LPD-4) Class Amphibious Transport Dock Service Life Extension Program

We are planning to commence the LPD-4 Class Service Life Extension Program (SLEP) in FY 1989. This will extend the service life of these ships to 45 years, modernize their engineering plants and improve survivability and self-protection systems. This year we are requesting $23.1 million for advance procurement for the first ship.

MINE COUNTERMEASURES FORCES

The Soviet Union possesses the world's largest offensive mining capability. In the event of war, mines could be employed to deny use of harbors, straits and coastal waters, thereby jeopardizing the importation of strategic materials and the reinforcement and resupply of U.S. and allied forces in Europe and Asia.

For many years our mine countermeasures capability has been inadequate to meet the threat. Our oceangoing minesweepers are approaching obsolescence and are increasingly difficult to maintain. We have established a minimum objective of 31 new mine countermeasures units which, in conjunction with our MCM helicopters, will have the mission of clearance of U.S. waters in time of war. Current plans call for 14 AVENGER (MCM-1) Class ships and 17 CARDINAL (MSH-1) Class Minesweeper Hunters. Eleven MCMs have been funded to date and the last three units will be requested next year.

VG-17 CARDINAL (MSH-1) Class Minesweeper Hunters

The lead ship of the MSH-1 Class was funded in FY 1984 and four more were appropriated last year. The remainder of the class will be requested over the next three years.

The MSH is a surface effect ship with a glass reinforced plastic hull to minimize the danger from magnetic mines. The MSH will use much of the same mission equipment as the MCM. These ships will be operated by the Naval Reserve Force.

This year we are requesting $196.1 million for four ships of this class.

MOBILE LOGISTIC SUPPORT FORCES

The expanding Fleet requires additional logistic support forces. These forces consist of multi-product "station ships" such as the AOE with the speed and capability to remain with the Carrier Battle Groups and shuttle ships to carry fuel, ordnance, stores and provisions from advance logistic bases or consolidation points at sea. Shuttle ships include Fleet oilers (AOs/TAOs), ammunition ships (AEs/TAEs) and stores ships (AFS/TAFS). In the even of non-availability of an AOE or AOR, one AO/TAO and one AE may be assigned to the Battle Group.

VG-18 Fast Combat Support Ship (AOE-6 Class

Our force level objective is 15 station ships. The four AOEs we require to meet our objective are planned for procurement over the period FY 1987 through FY 1991. We are requesting $612.7 million for the lead ship of the AOE-6 Class this year.

VG-19 Fleet Oiler (TAO-187) Class

This is the sixth year we are requesting funding for the TAO-187 Class. Our present force level objective is 19 ships. To date a total of nine ships have been appropriated. The budget includes $275.5 million for two additional units. The remaining ships in the class will be constructed over the last four years of the five year plan.

VG-20 CIMARRON (AO-177) Class Fleet Oiler Jumboization

The FY 1987 budget includes $62.3 million to fully fund the jumboization of the first AO-177 Class oiler. The present design would increase the capacity of the five ships of this class from 120,000 barrels to 180,000 barrels. We also are studying an ammunition variant of this design. The last four units of the class will be jumboized over the next four years.

VG-21 Ocean Surveillance (TAGOS-1) Class Ships

We presently plan to request a total of 26 TAGOS ocean surveillance ships. Their mission is to collect, process and transmit acoustic data. The first 14 ships of the class have been appropriated. Early results from these ships and their towed array sonars have been impressive. We currently are planning to change from a conventional monohull to a Small Waterplane Area Twin Hull (SWATH) design to improve our capability to operate in high latitudes under adverse weather conditions. The lead SWATH ship was appropriated in FY 1986.

This year we are requesting $148.1 million for the last three monohull units. Commencing in FY 1988 we plan to procure the follow-on SWATH units.

VG-22 Oceanographic Research (AGOR-23) Class Ship

As part of our effort to enhance the Navy's contribution to oceanographic research, we are planning to procure several new oceanographic research vessels. The AGOR-23 will be built to commercial standards and operated by civilian academic institutions. We are requesting $33 million in FY 1987 to fund this ship.

VG-23 Auxiliary Crane Ship (TACS)

We are requesting $61.1 million to convert two auxiliary crane ships this year. The purpose of these ships is to offload containerized and outsized cargo from non-self sustaining cargo ships, either offshore or in undeveloped or damaged ports. A total of six TACS are included in the five year plan.

CRAFT

VG-24 Service Craft

The FY 1987 request for craft include $39.9 million to procure a variety of service craft. This includes funding for one Torpedo Tester (YTT), which has been capped at $19.0 million. Also included are $15.9 million for three Floating Cranes (YD), $2.8 million for two Fuel Barges (YON) and $2.2 million for two Oil Storage Barges (YOS).

Landing Craft

We are requesting $19 million in the Landing craft line for the Special Warfare Craft (Medium) program. We plan to request a total of 18 units through FY 1990 to complete the program.

OTHER

VG-25 Strategic Sealift

Commencing in FY 1984, the Navy requested funds to purchase merchant ships which were no longer competitive in commercial trade in order to build up the Ready Reserve Force (RRF) to ensure rapid availability of adequate sealift in event of war. As the Merchant Marine continues to shrink, the RRF has grown. There will be 85 ships in the RRF by the end of this year. The objective is 116 ships by 1991. These include tankers, dry cargo ships, auxiliary crane ships, container ships and roll on/ roll off (RO/RO) ships. We are requesting $27.8 million to continue this program in FY 1987.

Sealift Enhancement - Civil Reserve Auxiliary Fleet (CRAFT)

We are requesting funds for the first time for a Sealift Enhancement Program which parallels the Air Force Civil Reserve Air Fleet (CRAF) Enhancement Program. This program is intended to stimulate commercial ship construction in U.S. shipyards, ensure U.S. Flag commercial ships have militarily useful features at mobilization and increase employment for merchant officers and seamen. The FY 1987 budget request includes $20.7 million for this new program.

Outfitting/Post Delivery

We are requesting $226.1 million for outfitting and $167.8 million for post delivery. Outfitting funds purchase repair parts and consummables to fill initial ship allowances for ships approaching delivery. Post delivery funds are used to pay for all work required to correct deficiencies identified during trials or post delivery.

Ship Contract Design.

This year the Ship Contract Design funding is included in the SCN Appropriation. The contract design phase is normally a joint Navy-shipbuilder effort which produces the contract drawings and specifications for the ships in the five year plan. Including Ship Contract Design under the SCN Appropriation will ensure a better correlation between the designs and the building profiles and improve reaction to late changes to the shipbuilding plan.

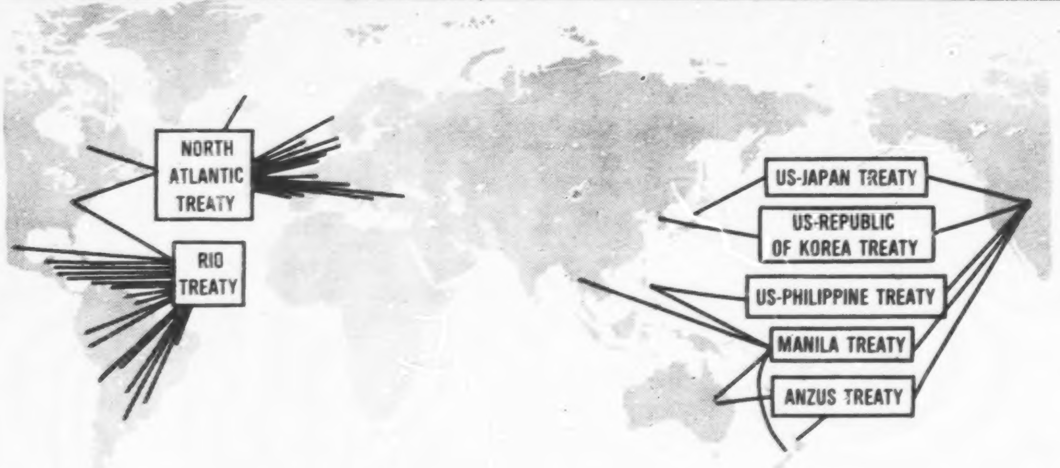
Mr. Chairman, that concludes my overview of the FY 1987 SCN Plan. I appreciate this opportunity to appear before your committee to assist you in your deliberations on the Defense Appropriations Bill. I urge your continued strong support for our shipbuilding program.

BLANK PAGE

BLANK PAGE

BLANK PAGE

ALLIANCES, TREATIES AND AGREEMENTS



NORTH ATLANTIC TREATY

RIO TREATY

US-JAPAN TREATY

US-REPUBLIC OF KOREA TREATY

US-PHILIPPINE TREATY

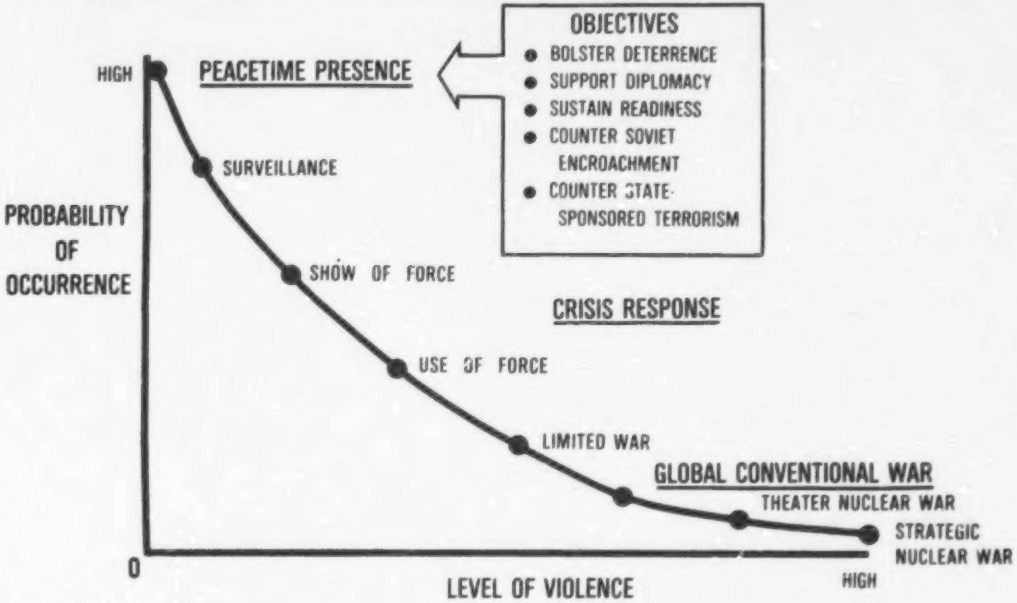
MANILA TREATY

ANZUS TREATY

43 FORMAL ALLIANCE AND TREATY PARTNERS

VG-1

APPLICATIONS OF MARITIME POWER



OBJECTIVES

- BOLSTER DETERRENCE
- SUPPORT DIPLOMACY
- SUSTAIN READINESS
- COUNTER SOVIET ENCROACHMENT
- COUNTER STATE-SPONSORED TERRORISM

VG-2

NAVAL FORCE LEVELS
BEGINNING FY 1986

STRATEGIC SUBMARINES	37
AIRCRAFT CARRIERS	13
BATTLESHIPS	2
PRINCIPAL SURFACE COMBATANTS	210
ATTACK SUBMARINES	100
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	62
MINE WARFARE SHIPS	3
MOBILE LOGISTIC/SUPPORT SHIPS	109
TOTAL	**542**

VG-3

NAVAL FORCE LEVELS
END FY 1986

STRATEGIC SUBMARINES	38
AIRCRAFT CARRIERS	13
BATTLESHIPS	3
PRINCIPAL SURFACE COMBATANTS	214
ATTACK SUBMARINES	101
PATROL COMBATANTS	6
AMPHIBIOUS WARFARE SHIPS	62
MINE WARFARE SHIPS	3
MOBILE LOGISTIC/SUPPORT SHIPS	113
TOTAL	**553**

600 SHIP FLEET COMPOSITION

VG-5

- 15 CARRIER BATTLE GROUPS
- 4 BATTLESHIP BATTLE GROUPS
- 100 ATTACK SUBMARINES
- BALLISTIC MISSILE SUBMARINES
- MAF-PLUS-MAB ASSAULT ECHELON LIFT
- 14 MINE COUNTERMEASURES SHIPS
- 10 UNDERWAY REPLENISHMENT GROUPS
- 7 CONVOY ESCORT GROUPS

COMPARISON OF NAVY SHIPBUILDING PLANS

FY 1983 - FY 1987
(COMMON YEARS)

FISCAL YEARS
($ MILLIONS)

	1987	1988	1989	1990	1991
FY 1983 REQUEST	28,074.6	–	–	–	
FY 1984 REQUEST	21,248.2	27,324.8	–	–	–
FY 1985 REQUEST	16,449.2	18,756.5	21,600.8	–	–
FY 1986 REQUEST	13,734.4	17,102.2	16,526.8	16,323.8	–
FY 1987 REQUEST	11,046.2	12,295.9	13,252.9	13,101.5	14,696.9

300

SHIPBUILDING AND CONVERSION, NAVY
FY 1987 BUDGET REQUEST
($ IN MILLIONS)

PROGRAM	SHIP/TOA
TRIDENT	1/1362.7
TRIDENT AP	146.4
SSN 688	4/2047.8
SSN 688 AP	284.8
SSN 21 AP	454.3
CG 47	1913.8
CG 47 AP	10.5
DDG 51	3/2448.0
DDG 51 AP	79.8
LHD 1 AP	232.0
MSH	4/196.1
AOE 6	1/612.7
TAO	2/275.5
TAGOS	3/148.1
AGOR	33.0
CV SLEP AP	83.5
LPD 4 SLEP AP	23.1
AO (JUMBO)	1/62.3
TACS (C)	2/61.1
SERVICE CRAFT	39.9
LANDING CRAFT	19.0
STRATEGIC SEALIFT	27.8
SEALIFT ENHANCEMENT	20.7
OUTFITTING	226.1
POST DELIVERY	167.8
CONTRACT DESIGN	69.4
TOTAL	**11,046.2**

301

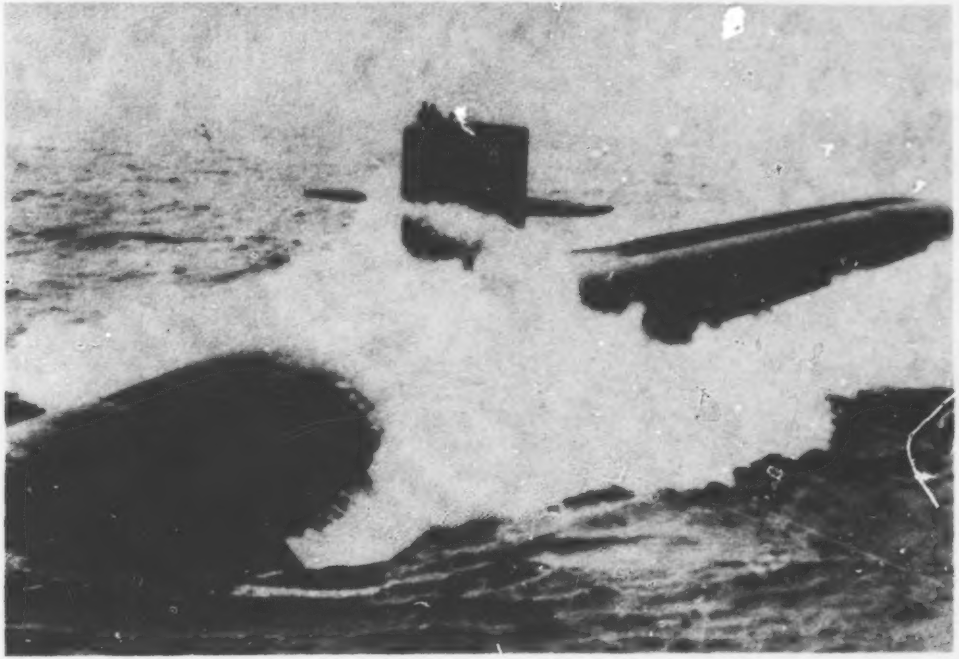
NAVY FIVE YEAR SCN PLAN

FISCAL YEAR 1987 - 1991

($ IN MILLIONS)

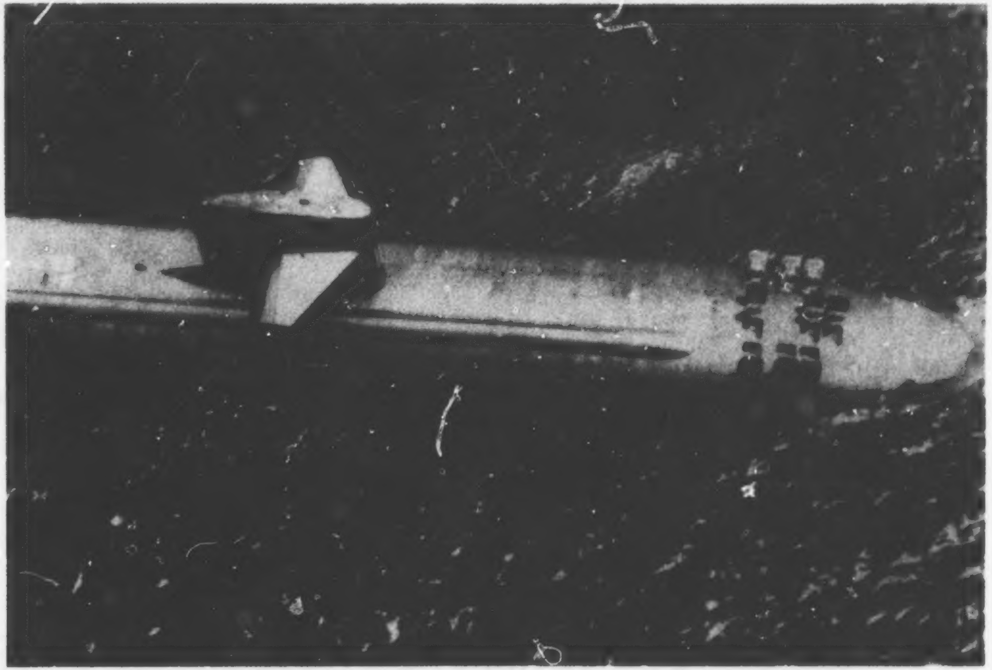
NEW CONSTRUCTION	FY-87	FY-88	FY-89	FY-90	FY-91
TRIDENT	1/1509.1	1/1516.5	1/1560.8	1/1621.2	1/1677.1
SSN-688	4/2332.6	3/2046.9	3/2200.7	4/2858.9	1/853.2
SSN-21	454.3	160.2	1/1515.1	604.7	2/2598.5
CG-47	2/1924.3	2/1902.6	2/1837.0	2/1872.4	-
DDG-51	3/2527.8	3/2354.6	3/2480.7	3/2431.2	5/3997.2
LHD-1	232.0	1/1046.9	1/705.4	43.8	1/1340.4
LSD-41 (CV)	-	1/311.2	1/281.1	1/283.0	1/293.9
MCM	-	3/272.2	-	-	-
MSH	4/196.1	4/181.8	4/183.0	-	-
TAO	2/275.5	2/319.9	2/314.0	2/318.1	2/347.4
TAGOS	3/148.1	3/193.9	2/118.7	2/117.9	-
AE	-	1/369.8	-	2/593.8	2/623.7
AOE-6	1/612.7	-	1/520.0	1/545.8	1/542.6
ARS	-	-	-	-	1/109.8
AGOR/AGX	1/33.0	-	-	2/90.5	3/110.9
LCAC	-	(9)/221.3	(9)/226.3	(9)236.0	(9)240.6
CONVERSIONS					
CV SLEP	83.5	1/544.8	155.4	155.2	1/797.4
LPD-4 SLEP	23.1	97.8	1/260.9	3/443.3	3/425.8
AO(JUMBO C)	1/62.3	1/49.5	1/71.3	2/115.6	-
TACS (C)	2/61.1	2/59.9	2/62.6	-	-
OTHER					
SERVICE CRAFT	39.9	30.2	56.4	68.5	76.1
LANDING CRAFT	19.0	60.5	84.7	72.2	44.4
STRAT SEALIFT	27.8	50.4	27.1	76.4	26.6
SEALIFT ENHANCE	20.7	18.4	22.8	21.8	21.4
OUTFITTING	226.1	286.3	275.4	270.8	303.1
POST DELIVERY	167.8	137.6	230.5	173.1	149.9
CONTRACT DESIGN	69.4	62.7	63.0	87.3	116.9
TOTAL	11,046.2	12,295.9	13,252.9	13,101.5	14,696.9
SHIP COUNT	21/3	24/4	21/4	20/5	20/4

TRIDENT SUBMARINE - SSBN

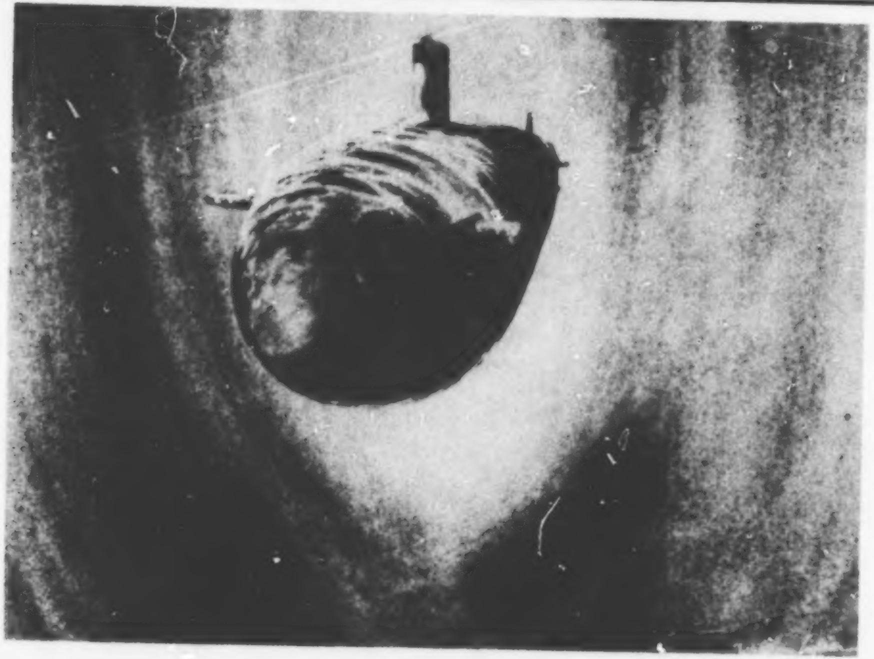


VG-9

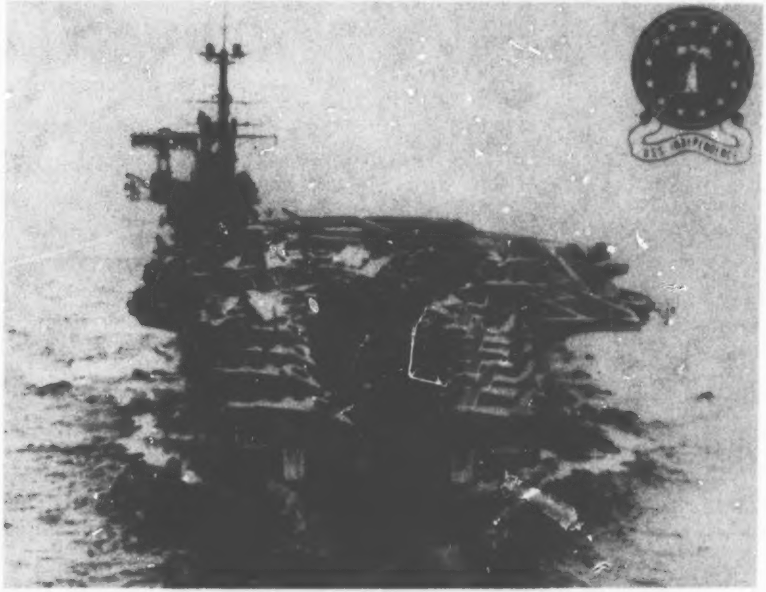
NUCLEAR ATTACK SUBMARINE - SSN 688



NUCLEAR ATTACK SUBMARINE - SSN 21



AIRCRAFT CARRIER
SERVICE LIFE EXTENSION PROGRAM-CV SLEP


U.S.S. INDEPENDENCE

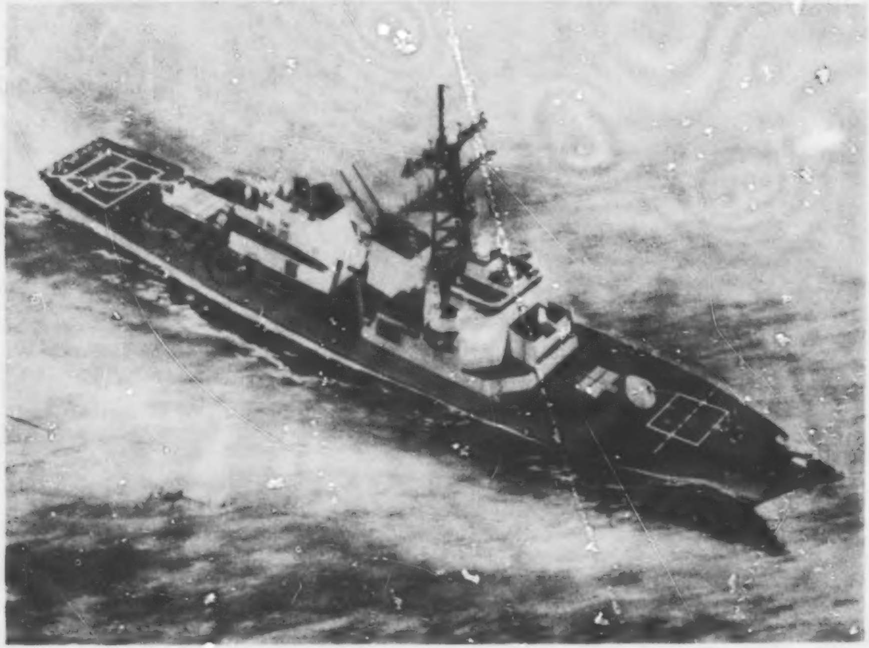
GUIDED MISSILE CRUISER-CG47

BLANK PAGE

BLANK PAGE

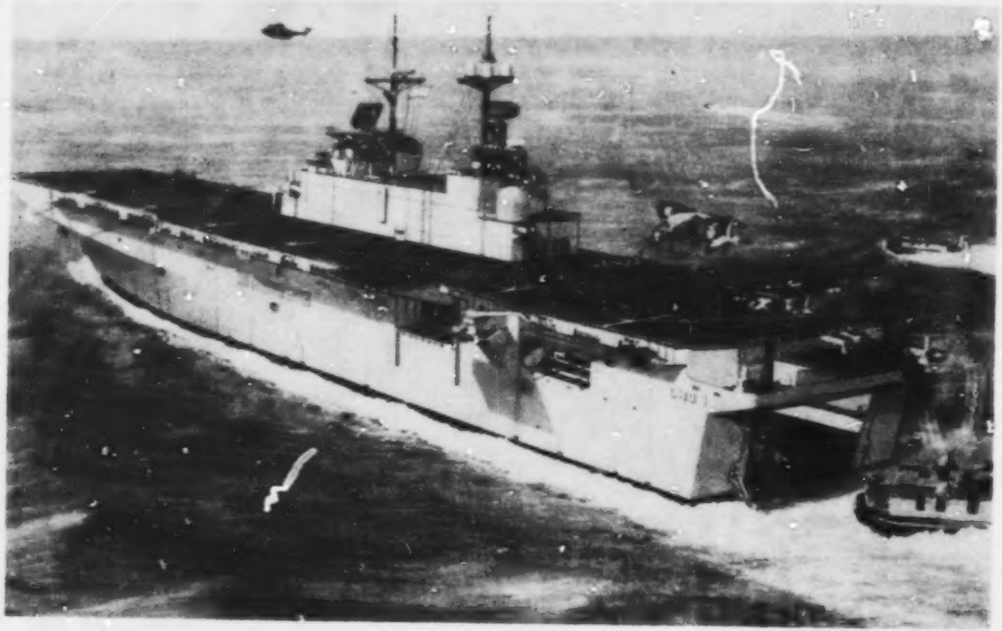
BLANK PAGE

GUIDED MISSILE DESTROYER - DDG 51

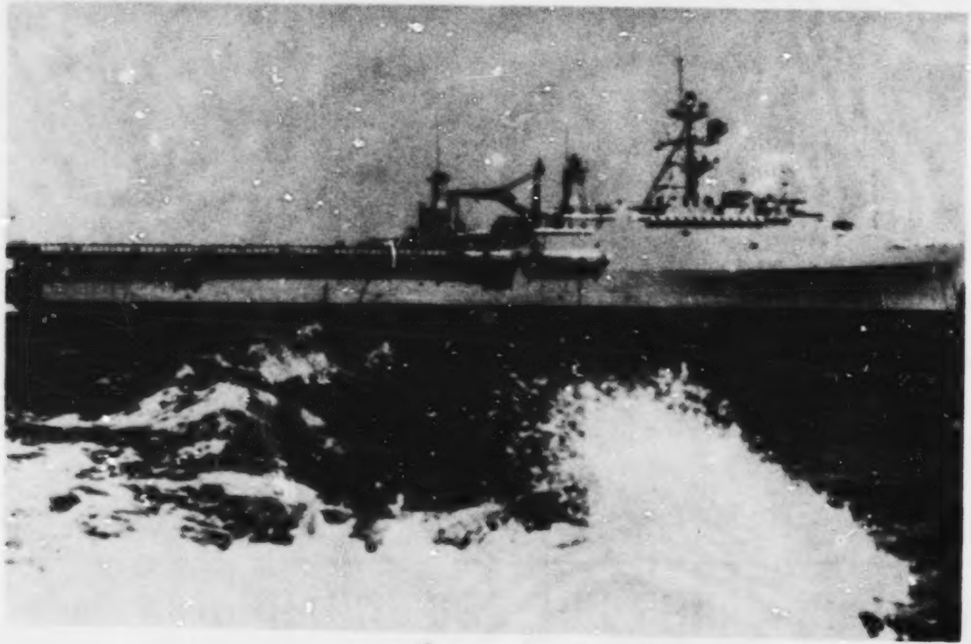


VG-14

AMPHIBIOUS ASSAULT SHIP - LHD 1

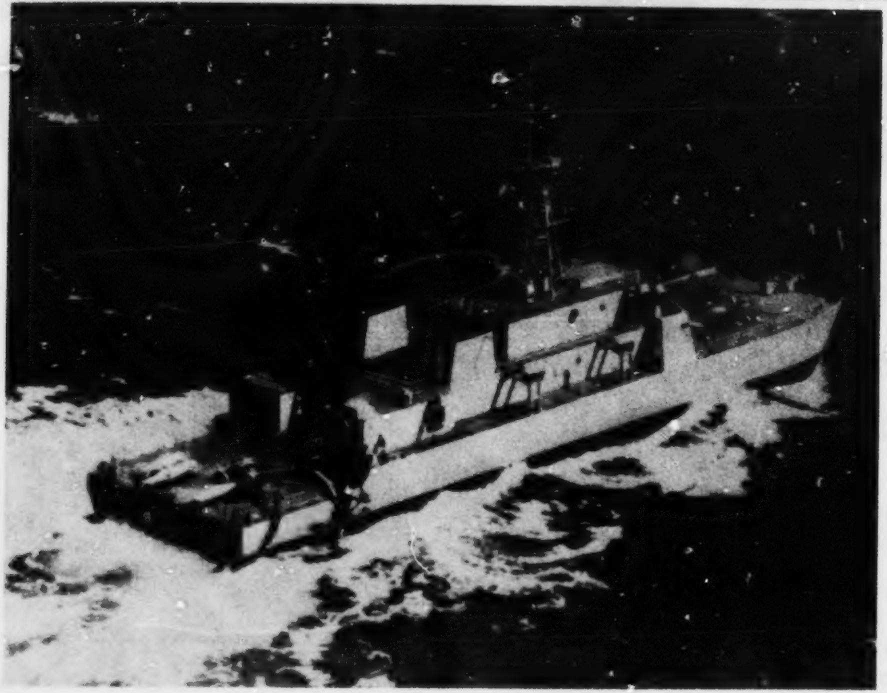


AMPHIBIOUS TRANSPORT DOCK - LPD 4
SERVICE LIFE EXTENSION PROGRAM (SLEP)



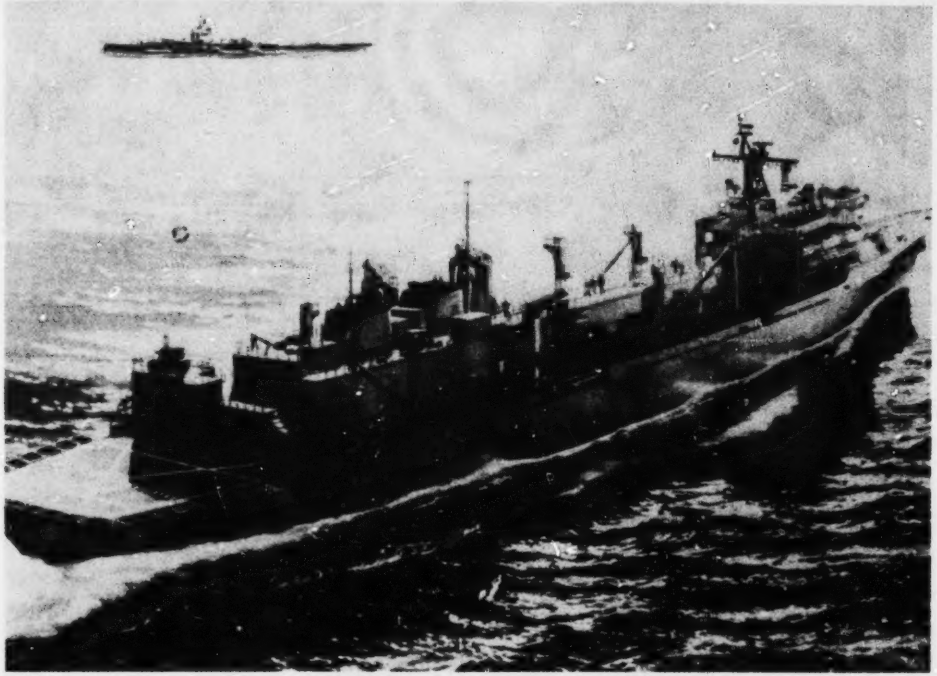
VG-16

MINESWEEPER HUNTER - MSH 1



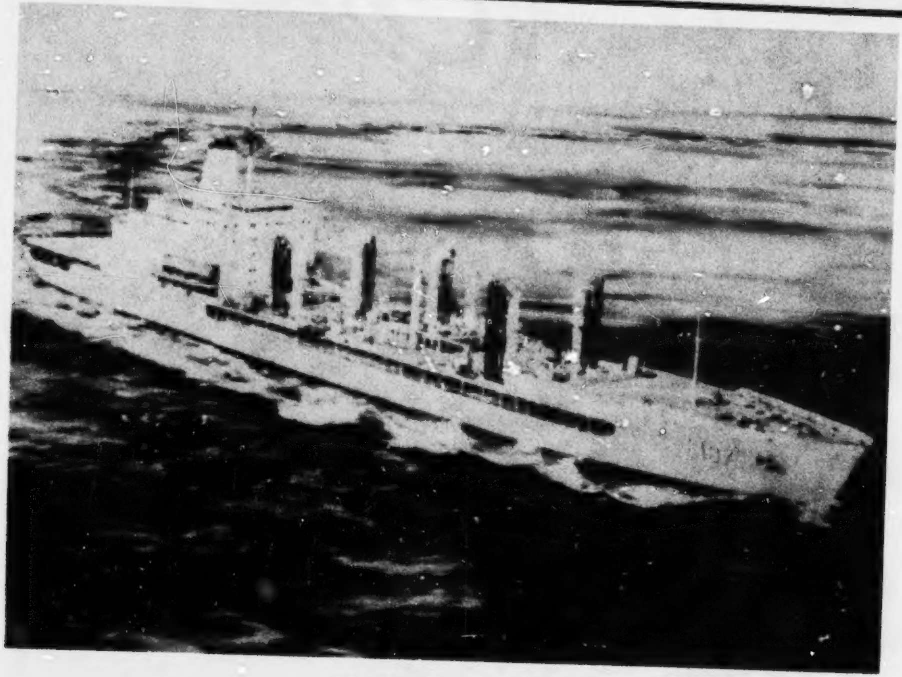
VG-17

FAST COMBAT SUPPORT SHIP-AOE 6

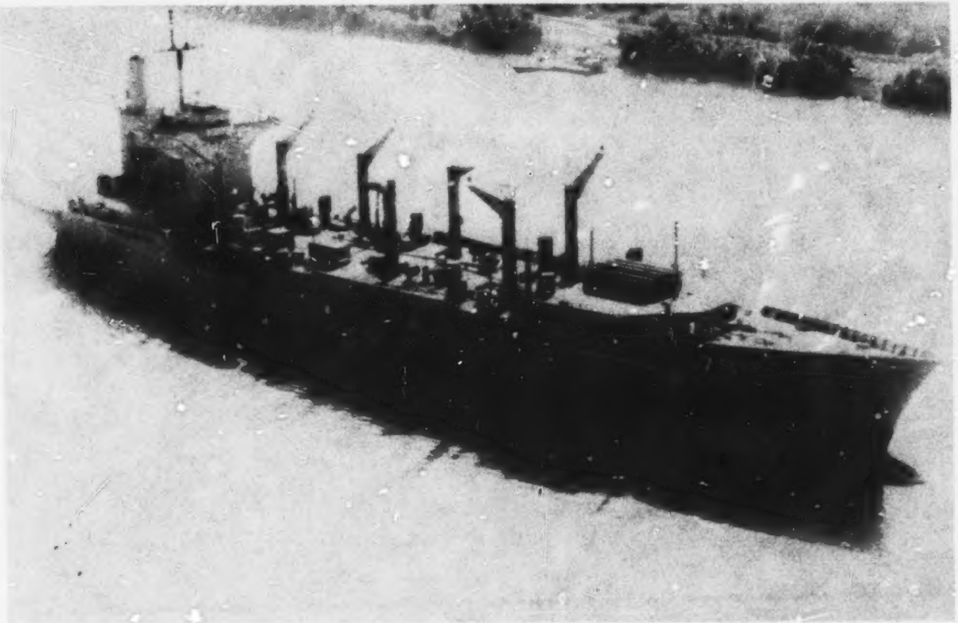


VC-18

FLEET OILER-TAO 187

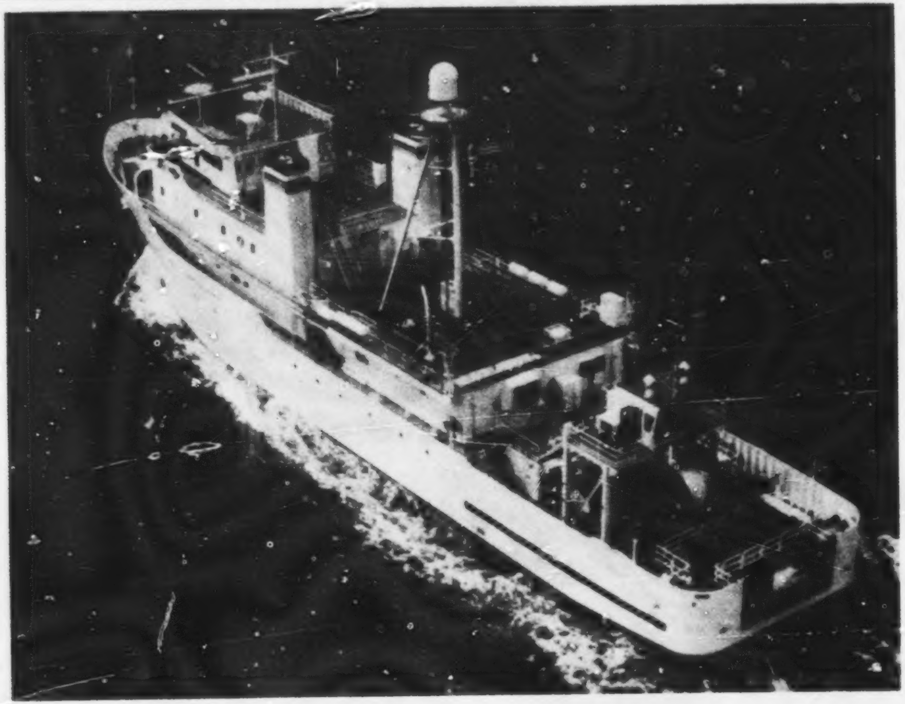


FLEET OILER JUMBOIZATION - AO 177



VG-20

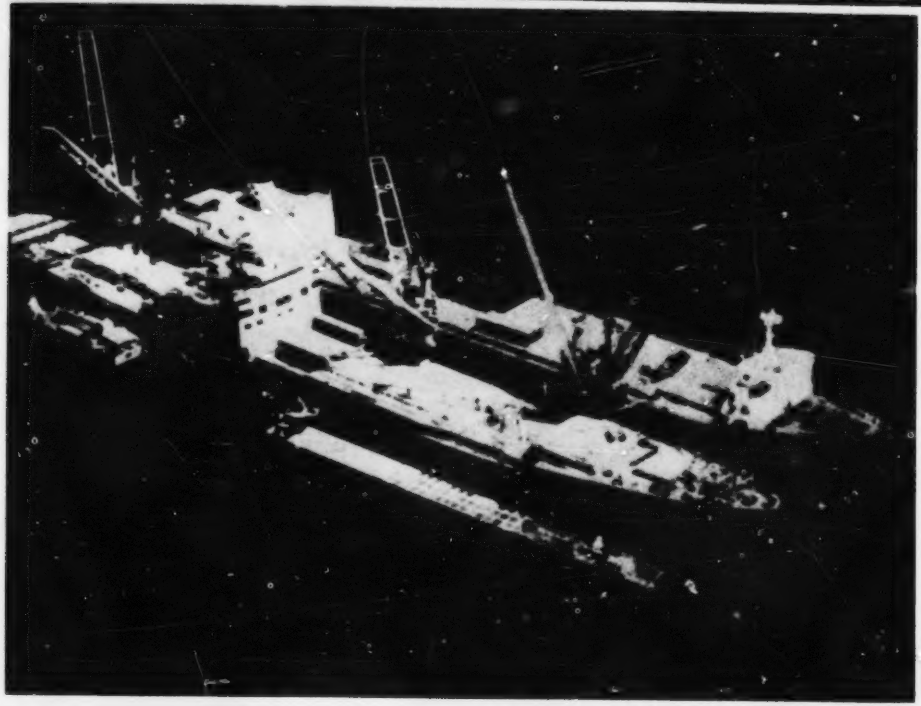
OCEAN SURVEILLANCE SHIP - TAGOS



OCEANOGRAPHIC RESEARCH SHIP - AGOR 23

VG-22

AUXILIARY CRANE SHIP-TACS



VG-23

CRAFT
($ MILLION)

SERVICE CRAFT

TORPEDO TESTER (YTT)	1/19.0
FLOATING CRANE (YD)	3/15.9
FUEL BARGE (YON)	2/2.8
OIL STORAGE BARGE (YOS)	2/2.2
	8/39.9

LANDING CRAFT

SURFACE WARFARE CRAFT MEDIUM (SWCM)	1/19.0

OTHER SHIPBUILDING
($ MILLION)

	FY 1987
STRATEGIC SEALIFT	27.8
SEALIFT ENHANCEMENT	20.7
OUTFITTING	226.1
POST DELIVERY	167.8
CONTRACT DESIGN	69.4
NET REQUIREMENT	**511.8**

GRAMM-RUDMAN-HOLLINGS

Mr. Murtha. Mr. Secretary, you just said that you took a hit from Gramm-Rudman-Hollings, and it resulted from not buying items, because they were not needed.

Mr. Pyatt. Yes, sir.

Mr. Murtha. That implies that you had money which was unobligated, that we could have waited until the next year to put in the budget. Is that what you meant?

Mr. Pyatt. No, sir, when you full fund a ship, you want us to have all the money at one time, so you know what you are paying and that is good. When you actually execute it, you don't want to buy equipment early, have it sit around and install it.

Because we did execute sound business management, we found ourselves with an unobligated balance that became the target of a cut.

Mr. Murtha. This has been a real dilemma, one of the biggest problems we have in this committee, is the unobligated balances. They have increased so much, but in this case, you have the money. You spent it when it was necessary, and you would have spent all of it at some point, but because you didn't spend it prematurely, which was not cost-effective, you took an unnecessary cut.

That is what you are saying.

Mr. Pyatt. Right. We are looking at spending the money prematurely.

Mr. Murtha. I see what you mean. I don't know how we can follow the procedure of full funding, and yet, not have unobligated balances, which I know you want full funding and yet, these unobligated balances cause us fits, because of the budget situation the way it is.

The gentleman from Louisiana.

NEW ORLEANS DRYDOCK FACILITY

Mr. Livingston. Thank you, Mr. Chairman.

Mr. Secretary, I know you are in the throes about what to do about the T-AGOS program, and it is a little awkward for me, Mr. Dicks is not here, but on another matter.

There is a Navy drydock, one in New Orleans. What are the Navy's intentions with regard to this drydock?

Mr. Pyatt. We are holding discussions with local authorities to take over that lease. It would be a fine conclusion if we can come to an agreement on terms.

Mr. Livingston. The Port of New Orleans is interested in leasing it. Does the Navy have any plans to take the drydock away from the City even if they came up with an adequate arrangement?

Mr. Pyatt. I know of none. There have been some discussions and those discussions should proceed to conclusion.

Mr. Livingston. You will continue to keep us informed about that particular item.

IMPACT OF SHIP REPAIR POLICY ON NAVY CREWS

First off, let me ask you, what is the Navy's current position on reserving ship repair work for home ports versus coast-wide competition?

Mr. PYATT. This was an issue we worked on quite a bit during the appropriations process. Our view is that overhauls should be conducted on coast-wide competition and SRAs, short-term work, should be conducted in home ports where there is adequate competition, and that means all of them really, because that is the best way to take care of the crew.

Mr. LIVINGSTON. The primary argument against elimination of the policy which reserves SRAs and PMAs to home ports is the adverse impact on its personnel. How real is that impact?

Admiral METCALF. Whenever you take people out of their home port, you will have an adverse impact on their families. We spend a lot of time out of our home port, and when you take a look at the reasons people do not reenlist separation of family is always in the top bracket of why we do not retain officers and enlisted men.

Mr. LIVINGSTON. How necessary is it to have Navy crews on board ship during an overhaul?

Admiral METCALF. The answer to that is based on how long the overhaul is. If you had overhauls of enormous length it would be less necessary.

For the SRAs, it is necessary. They are doing the normal maintenance, training, that sort of thing, so you can't take the crews off.

Mr. LIVINGSTON. Could a policy be worked out in which the availability is divided up into three periods in which only a third of the crew is present for each period?

Admiral METCALF. You could devise a policy for almost anything you want to do. Would you have an effective warship when you got through?

We have tried it. We tried de-crewing three or four years ago; doing exactly what you suggested, and it turned out that, one, it was not cost-effective, and two, we didn't get the ship out we wanted.

Mr. LIVINGSTON. That is the bottom line. It does depend on the length of time the ship will be in drydock, but it seems like it is not too terribly cost-effective to keep a ship laid up for more than six weeks at a time and keep the whole crew aboard as well.

Admiral METCALF. Well, they are going to schools, doing all kinds of things. The assumption is that they are not doing productive work and increasing their war-fighting skills, and the fact is, they are.

They are doing maintenance, ship's force work and the other things you have to do on a naval ship.

Admiral ROWDEN. Another point, there is a regiment of tests and acceptance of work being done, and the people best equipped to do this are the people who live with and operate that equipment, who are the crew members.

They can do it most objectively, and in the very best manner. They perform that function as well as their own maintenance a whole lot during overhaul.

T-AGOS OCEAN SURVEILLANCE SHIPS

Mr. LIVINGSTON. Getting back to the T-AGOS thing, obviously it is a problem.

Mr. MURTHA. Go ahead, ask about it if you want.

Mr. LIVINGSTON. I feel a little awkward in asking questions about it, but the program is in jeopardy, and I know for a fact from my service on the other committee on which I serve, that these T-AGOS boats are extremely important to the security interests of the United States.

Has the Navy decided how to complete the contract which was originally let to Tacoma Boat, and what do you intend to do with those last 4 boats?

Mr. PYATT. We are in the process of resolving a series of issues that need to be considered, and I think it will evolve that several of the ships will be completed at Tacoma Boat, and we will probably procure, reprocure some from an open competition.

Mr. MURTHA. What is the technical situation now? Are they in default now? I am talking about Tacoma.

Mr. PYATT. They are not in default now.

Mr. MURTHA. Could they default?

Mr. PYATT. They could.

Mr. MURTHA. Then what happens?

Mr. PYATT. That brings in, where do we go from there? They may be able to complete negotiations—I hate to conduct negotiations here. They may complete a portion of the ships, stop right now, and then the problem becomes ours of how to pick it up and go from there.

Mr. LIVINGSTON. Roughly $13 million left on a $450 million contract, and they have what, two ships to complete under the contract or three, four?

Mr. PYATT. Four.

Mr. LIVINGSTON. Four, and they can't do that for $13 million, can they?

Mr. PYATT. No.

Mr. LIVINGSTON. Is it the Navy's intention as of this minute to give them any more money?

Mr. PYATT. No.

Mr. LIVINGSTON. Am I wrong in the following——

Mr. MURTHA. Excuse me. We have already paid for 12 ships?

Mr. PYATT. We wrote a contract for 12 ships. We have not paid for the 12 ships—we are paying as we go along. They are behind in the production of 12 ships. It is an overrun situation.

Mr. MURTHA. What percentage of the money have we given them?

Mr. LIVINGSTON. Almost 90.

Mr. PYATT. 90 percent or more. Eight ships are completed.

Mr. LIVINGSTON. Out of 12.

I want to run through some facts, as I understand them. Last July, beginning in July, most workers were sent home without pay because of cash shortages.

July 11, layoffs began for up to 600 workers and management employees, and also in July, the T-AGOS work force was reduced from 600 to 200, and in November of 1985, all construction on Tacoma's two incinerator ships was halted, and as of last month, Tacoma has halted all work on T-AGOS projects, and all employees including office management on the project have been either laid off or fired.

You say they are not in default, but the Corporation again, according to news accounts, has lost nearly $20 million in 1983, $48 million in 1984, and the losses for 1985 are reported to be $36 million, and there have been several changes in management and ownership, and they have missed the payment deadlines for rent to the Port of Tacoma and local governments for property tax payments.

And as of May, they owed $1.2 million in total back rent to the Tacoma Port Authority and in June 1985, the Coast Guard raised questions about their financial ability and stability, after Todd beat them out for a Coast Guard fleet overhaul contract. In July of 1985, there were cash shortages that forced Tacoma not to pay $700,000 in interest payments, and they filed for reorganization under the Federal bankruptcy laws. The Midland Capital Company, one of the main investors who bought a controlling interest in Tacoma in January of 1985, has filed for reorganization as well, under the bankruptcy laws.

And Mr. Secretary, are they in default or not?

Mr. Pyatt. They are not in default. I know all of this.

Mr. Livingston. I am making sure that the record is complete. I also want to reemphasize that I am not trying to be in a position of taking a contract away from a sitting member of this committee, and if he were here, I would tell him that.

Mr. Pyatt. Our next step will be open competition.

Mr. Livingston. I think that is fair. I think that is important, but the point is, that you have got a problem here, and I just wonder how you are going to resolve it.

Mr. Pyatt. I understand the problem. I understand where they stand. I understand that, where we will go in our next step, and we have to raise the money to do it, and that is a process involved of its own.

A year ago, we were in this committee with others making predictions that no ships would be delivered. Now we have nine ships almost done, and I am pretty confident we will pull the 10th ship within the contract scope.

Mr. Livingston. When we mark up later in the year, will we know anything more about the situation?

Mr. Pyatt. Yes, we have a track record of working with this committee, and keeping it informed of our progress, and we will do that in the same manner.

Mr. Livingston. Fine.

Is the chairman ready?

Mr. AuCoin. Are you done with your questions?

Mr. Livingston. I have a couple on T-AGOS I would like you to answer for the record.

[Clerk's note.—Questions submitted by Mr. Livingston and the answers thereto follow:]

Question. I understand that the Navy is considering finishing ships 9 and 10 at Tacoma within available funds? How much in available funds are left?

Answer. Total funds remaining in the contract are $4.7M (contract funds) and $8.6M (performance bond).

Question. Given the labor rates and the work needed to complete vessels 9 and 10, is the amount of funding sufficient?

Answer. Yes.

Question. What are physical completion percentages for ships 9, 10, 11 and 12?

Answer. Defining Physical Completion as actual fabrication and erection of purchased components, the physical completion percentages are as follows:

T-AGOS:	*Percent*
9	69
10	23
11	3
12	1

Question. What does the Navy intend to do with ships 11 and 12?

Answer. Alternatives are being investigated for completion of ships 11 and 12. It is anticipated that these two ships will be completed from within the private sector.

Question. How much longer will a new competition take? How long will this delay delivery?

Answer. A new competition will require approximately one (1) year. Delivery of ships will be delayed beyond current contract delivery dates by approximately 30 months.

Question. Will the Navy have to renegotiate the existing contract with Tacoma if it recompetes ships 11 and 12?

Answer. The Navy is planning to restructure the existing contract with Tacoma Boat.

Question. Wasn't their existing contract price for each ship based on a 12 ship buy?

Answer. Yes; however, Tacoma Boat does not have the financial resources to complete the 12 ships for the existing contract price. The Navy is unwilling to increase the price.

Question. Will renegotiation mean additional costs to the Navy to complete ships 9, 10, 11 and 12?

Answer. Yes. Tacoma Boat is unable to complete ships 11 and 12 for the existing contract price. The Navy is unwilling to increase the price. Ships 9 and 10 will be completed by Tacoma Boat. Costs to complete ships 11 and 12 under a new competition will be in addition to the current total contract amount for ships 1-12.

Question. What assurances do we have that the existing contractor can complete the contracts for 9 and 10 or any ships given their financial situation and their bankruptcy status?

Answer. TBC has taken steps to minimize costs and has scaled back operations to a 2-ship program. TBC's plans to deliver ships 9 and 10 appear reasonable and achievable.

Question. I understand that all employees, management included, on the T-AGOS program have been laid off. Is this true?

Answer. No. The majority of employees are on furlough, subject to immediate recall. All employees contacted so far have expressed a desire to return to work.

[CLERK'S NOTE.—End of questions submitted by Mr. Livingston.]

DECREWING SHIPS DURING OVERHAULS

Mr. AUCOIN [presiding]. Mr. Murtha asked me to take over until he comes back.

Secretary Pyatt, let me come back to the crewing requirement when ship work is being done. My colleague from Louisiana was asking a series of questions on that. It is worth exploring a little bit further.

Would you indicate to the Committee again why it is your view that the whole crews intact need to remain with the vessel when the work is being performed, whatever it may be?

What is the rationale behind this?

Mr. PYATT. Let me give you my understanding and have the two gentlemen here who have operated ships and have direct responsibility talk from their experience. The crews do a lot of work, and they oversee the work that has been done, is being done, and in an SRA situation, particularly, they are involved in training in the home port area, so it is those combinations of things, different mixtures and different classes of ships.

Admiral Metcalf, carry on, as you understand from your experience.

Admiral METCALF. I have gone through the business of crew stability and separation from families. You don't put a group of people together, and march them on board and sail away.

It requires a rather complex organizational structure to make a ship work.

Mr. AUCOIN. Let's say you have a ship that, in the interest of increased competition, has been put up for coast-wide competition, and in order to minimize separation from families, why not de-crew that ship in whole or in part, so that wear and tear on personnel is not a factor, and the Navy is a beneficiary of the increased competition that results from coast-wide bidding?

Why can't that work?

Admiral METCALF. It would cost more, because the crew performs its many functions such as security, fire watches, ship force work, which would have to be contracted. Part of an overhaul or SRA involves a large amount of repair work and preservation which they perform on that ship while it is in that SRA. Accordingly, the cost would go up if you decrew.

Then there is an efficiency factor.

Mr. AUCOIN. Would you say that is a significant factor?

Admiral METCALF. Absolutely. From the warfighting perspective, you have that crew, it is an entity, and you are training them on the equipment they have got to maintain and operate, and as Admiral Rowden mentioned, they are testing the equipment as it is fixed by the repair activity.

They are the ones who are going to have to live with it, fight with it, and so they perform a very, very important testing function, to see that the work is done right.

Mr. AUCOIN. The crews go through periods of training classes, things of this kind. Couldn't this be a time which crews could return to their home port area for that kind of training and not have the separation from families, and have it scheduled in a way so when the ship is ready, the crew can have its training finished and rejoin the ship and be off to the races?

Admiral METCALF. Well, the answer to that is no.

Mr. AUCOIN. The answer is no. That is beyond the capability of the Navy to do?

Admiral METCALF. It is a complex one to deal with. I have dealt with it before. Part of the equipment they will be training on is equipment installed aboard a ship.

Mr. AuCOIN. Only one copy of the equipment?

Admiral METCALF. It is, in that hull configuration. A ship is a complex entity of equipments, an interaction between those equipments. In theory, take the CIC people, you could take them off perhaps or certain elements of them and we do that for limited periods of time, but once again, when you take them off altogether, you lose effectiveness and have to pay for this fire watch function, involved in ship security, and all the other things which are performed by a ship's crew.

Mr. AuCOIN. It seems to me we have to look at the other side of the question, too, and that is, what savings can accrue to the Navy from the bidding that comes as a result of sharper penciling on the part of the bidders, if by opening up more work to coast-wide competition, you get more bidders in the process.

My understanding is that, in coast-wide bidding on the West Coast, you typically see as many as 12 bids, in a competitive bidding process, but whereas in a home port situation, it is normally two to three, so it is possible, it seems to me, that if we can find ways to save wear and tear on personnel by keeping them closer to their families, and yet encourage as many bids on as broad a basis as possible, the actual cost savings may offset those costs that you say that might be run up by de-crewing.

Admiral METCALF. The object of a repair is to get it done, and the ship's force is very much a part of that repair. If you don't put the ship's force into it and you commission the ship, and move it around, the responsibility for that ship still rests with the Navy, the Commander, the Commanding Officer. The safety and security rests with the people in the ship's crew.

If we want to modify that, I don't see how we do it.

Mr. AuCOIN. You tried it once three years ago?

Admiral METCALF. It didn't work.

Mr. AuCOIN. My understanding of that single experiment in Maine was that some of the crew that was taken from the ship was put in certain classes, training classes, and one of the problems was that the classes that the crew was put into extended in duration beyond the time that the vessel was finished and prepared to go back at sea, so the Navy made a miscalculation on what the length of class was, versus when the departure of the ship turned out to be, and in another case, other parts of the crew were deployed on another ship, and it was at sea when the ship repair was done, finally finished and ready to go.

It seems to me that with a little more careful synchronization in planning the Navy ought to be able to schedule sailors into classes that end on such a time schedule that that problem doesn't occur, and if they are on another vessel, knowing what the voyage length is going to be, that you will not have them off somewhere at sea when you need them back on the original vessel.

It's a question of management.

Admiral METCALF. That is fascinating, because I was involved in both ends of that, so you have asked the right guy. I was involved in the planning, and all of the things which you are talking about, we tried to do.

There is always some instability in what you can do, people fall out of class, fail, other sorts of things.

When you de-crew a ship, and then you re-crew it again, you have to establish pre-commissioning crew, bring those people together, and make them into a team. A ship's crew is not a bunch of people, who all jump aboard ship and sail.

If you decrew a ship, you have to recrew again, to get a captain, executive officer, all the people, and start from scratch.

Mr. AuCoin. Why do you have to start from scratch?

Admiral Metcalf. You need to put together a team of people.

Mr. AuCoin. You could reassemble the original team?

Admiral Metcalf. Put these people in barracks, schools, all other sorts of things, is that what you are suggesting?

Mr. AuCoin. That is what you did three years ago in the case of the Bath experience.

Admiral Metcalf. No, we transferred those crewmen around.

Mr. AuCoin. Wasn't the intention to reassemble that crew?

Admiral Metcalf. No, it never was. We brought some back because we had a very, very difficult problem. The Bath experiment was to see if it could be done to save money, exactly what you talked about.

That was why we went through that experiment, and it looked like we saved money, but in one of the areas we lost out. That ship was not a warship until a year and a half after the overhaul. We had very difficult problems.

Mr. AuCoin. Because of dispersal of the original crew?

Admiral Metcalf. Well, in my judgment, it was as much of a testing function and how the repair work was done. It is very difficult for a repair yard to put a ship together, particularly one which is not brand new.

It is very hard for them to do, and get quality work. Nobody does the quality checks like the guy who is going to have to be shipmates with that piece of equipment. It just didn't work.

We had an unfortunate situation. The ship failed its propulsion examination, several times in a row; the Commanding Officer was relieved for cause.

In my judgment, we asked too much of a Navy crew. It didn't work, and that is in the record. We can go back and explore it if you like.

Mr. AuCoin. That is what I am trying to explore today. Are you saying that the work was defective, is that the problem?

Mr. Pyatt. No, no. We went to one of the best shipyards in the country sole source, and went to Bath.

Mr. AuCoin. So the work was not defective?

Mr. Pyatt. We tried as best we could, but we hated going sole source, but we went back to the guy who built the ship, figuring this was the best way to build in the kind of safeguards.

Mr. AuCoin. If the work was not defective, what was it that made the thing so awful then at the end?

You just painted a pretty bad horror story.

Admiral Metcalf. It wasn't so much that the work was defective. Lack of familiarity, the corporate memory that goes along with a piece of equipment when you repair it was not there; the recordkeeping suffered.

Mr. AuCoin. That could be corrected with the reassembly of the original crew?

Admiral Metcalf. They haven't repaired it, I mean, they have not watched it.

Mr. AuCoin. Are you telling me every single person of a ship's crew has to be present on every day during a repair job?

Admiral Metcalf. Not every day, not every person.

Mr. AuCoin. What percentage?

Admiral Metcalf. Let's talk about people. The people you want there are your supervisory personnel, and you want some number below that, the senior and the next, who you are trying to train, so that they watch the repair taking place.

I would say in the engineering ratings where you talk about machinery, the most difficult part of a repair, you would want at least 75 percent of them there.

If you are talking about the people in radio, maybe it is 50 percent. It is very difficult to judge because a ship is a system, not an engineer.

Mr. AuCoin. So, it could be possible to partially de-crew a ship, or minimize the crew at certain levels, during certain periods ensuring that the critical people are there at the time when they are needed?

Admiral Metcalf. It is possible to do anything if you want to accept the risks.

Mr. AuCoin. Could a policy be worked out in which availability is divided up into certain periods where portions of the crew, and maybe this question has been asked, but a portion of the crew is there, you have the people who need to be there there, and the others who don't need to be there back at home port with the families taking training—all the other things that go into this?

Is that possible?

Admiral Metcalf. That presumes that the repair work by a repair activity can be laid out in such a fashion that you could have the right people there at the right time and absorb transportation costs. It also assumes that quality control is merely coming out and watching a piece of gear being turned on.

Well, that is not the way quality control is done. You watch how that pump is assembled, or disassembled, watch how it is put together or installed. As a commanding officer of a ship I wanted my engineer and his people watching that ship as repairs were being made.

Mr. AuCoin. You are talking about critical personnel. I am talking about non-essential personnel at certain points in the process.

Admiral Metcalf. Particularly on the modern low mix ships we put together, there are no non-essential personnel.

Mr. AuCoin. The experiment you did in Maine was a full-blown overhaul.

Admiral Metcalf. Yes.

Mr. AuCoin. The shorter-term work that you do is not as complex as the work that was performed in the experiment that you were in, so to that extent, aren't some of the problems that you describe not applicable?

Admiral **Metcalf**. The people you mention are the very ones who suffer most from family separation, e.g. the First Class Petty Officer who has been married for 10 years, kids 8, 9 years old.

These are the people who suffer and have the most difficult time with family separation. So the kinds of people that you are talking about, are the very ones we need aboard ship during an overhaul.

If you want to take the seaman off and instead pay for the functions of security and fire watches, I suppose you can do that.

Mr. **AuCoin**. I would think in those cases, the problems of the Petty Officer, and the more senior NCOs and so forth, their separation from family could be dealt with by the Navy looking at its schedule of SRA work and taking into account how long the repair job is expected to be, how long the ship had been at sea, away from home, and find those that had not been away for so long, and choose those as the small work packages that are put up for bid on a broader basis than simply on a home port basis.

That would solve the problems of the NCOs that have to stay with that work that you refer to. Maybe I give the Navy too much credit.

Admiral **Metcalf**. You have certainly given us a very interesting problem.

Mr. **AuCoin**. Your goal is 600 ships able to fight 3-ocean wars, you ought to be able to plan this modest proposal properly.

Admiral **Metcalf**. We would like to have our people in their home ports for at least 50 percent of the time. I think that is a reasonable proposition.

You send a ship to the Mediterranean on deployment for six months. In theory, you want him back in his home port for the remaining six months. But, you are training him, and he is standing watches on board. You need to balance all these factors.

Mr. **AuCoin**. My point simply is, and I won't belabor this part of the discussion, not all of our vessels are away for six months in the Mediterranean and looking at the voyage history of each of the ships as the SRAs and other small work packages are scheduled, it ought to be possible to select some that have not been away for so long, and among those, to find cost savings, the Navy is going to need in the era of Gramm-Rudman-Hollings to choose some of those, open them up to broader competition, more competitive bidding and get the low costs while avoiding wear and tear on the family.

Admiral **Metcalf**. I won't say that that is not possible. Clearly, you have described a situation that in some isolated incidents may happen. But I am not so sanguine as to suggest it would occur in the frequency that you or I would like. That is the problem.

Mr. **AuCoin**. No one thinks it can be done without planning, but it is clearly a matter of some flexibility, and some real cost savings could come to the Navy, save Navy budgets, and also keep critical infrastructure alive up and down the various coasts.

Admiral **Metcalf**. If you want to pay for those sorts of things, you can do it.

Mr. **AuCoin**. Let me ask you, Secretary Pyatt, if you would provide for the record at the committee's request, not just myself——

Mr. **Pyatt**. It makes no difference. We will be glad to provide it under either circumstance.

Mr. AuCoin. Provide the best ideas you can think of, to make a de-crewing situation work whether it be a policy determination that Congress directed or one you decided to embark upon. What would be the steps that you should be taking into consideration to make the system work, keeping in mind personnel, families, and the potential for cost savings.

Mr. Pyatt. Yes, sir.

CONGRESSIONAL DIRECTION

Mr. Murtha [presiding]. Last year, the committee directed the Navy to procure three Service test models for an engineering change or modification to the SQR-17 in order to provide on-board training capability for the Naval Reserve.

This past Tuesday, we were told that the award is now being held up. Is NAVSEA or your office, Mr. Pyatt, holding up this program, and if so, what is the reason for the delay?

Mr. Pyatt. Not to the best of my knowledge.

Admiral Rowden. Not that I am aware of.

Mr. Murtha. Last year, the Navy held a competition for the SQQ-89 trainer. Do you intend to develop a second source for the trainer, and if so, when would you compete the follow-on procurements?

Admiral Rowden. We do intend to compete the follow-on procurements for the SQQ-89. We have shared the program with your staff here. There is a directive from Assistant Secretary Pyatt, which indicates that we need to have the contract awarded no later than the 1st of September, 1986.

We are on track to do that now.

Mr. Murtha. On the SQR-17, when will that be completed? That is for the trainer?

Admiral Metcalf. SQR-17 is an acoustic processor.

Mr. Magliocchetti. The language that was put in the conference report last year dealt with the SQR-17 modification, the ECP for the Naval Reserve trainer, which the conferees agreed upon, and added $6.8 million to procure the trainers.

The question Mr. Murtha asked was, is the program being held up, and the response was, not to anyone's knowledge, and the next question, when is it going to be awarded?

Admiral Rowden. I will provide that. I don't have that.

[The information follows:]

The $6.8M that was appropriated for the Reserve Frigate ASW Trainer has not been authorized by Congress. We will proceed to award a contract in compliance with Congressional direction when the funding is authorized and in accordance with DOD directives.

Mr. Murtha. The Congress also directed that several pieces of equipment on the CG-47 be competed. Could you give us a status on the frequency converters?

Admiral Rowden. We are working at the moment to get the frequency converters competed, and I don't recall exactly when that is going to occur, but I can get you the exact date.

Mr. Murtha. Propellers, AEGIS color graphic display, provide that for the record.

Admiral Rowden. Yes, I will.

[The information follows:]

Frequency converters—The testing of various frequency converters to determine their technical suitability for operation with the AEGIS Combat System has been completed. Reduction and analysis of the test results is continuing. Based upon the evaluation results, one design will be selected as the basis for a competitive selection of a second source. The selection process for the second source will start in FY86.

Propellers—The Navy is currently developing a second source in addition to the existing source for DDG 51 propellers, Byrd Johnson Co. Qualification is on track to support competition between the first and second source for propellers for the FY88 and out-year ships.

AEGIS color graphic display—In compliance with Congressional direction, the Navy is working on a plan to compete color graphics in 1988.

SQR-17 AND SQR-18 SYSTEMS

Mr. Murtha. On the SQR-17 and the SQR-18 systems, Mr. Secretary, the fiscal year 1985 contract for the SQR-17 acoustic processor still has not been awarded. We have been advised on several occasions that the award would be in January, February, and most recently, March.

Why has this award been continually delayed?

Mr. Pyatt. I understand the negotiations have been tough.

Admiral Rowden. The negotiations have been very difficult. We expect to award the contract by the end of March, this year.

Mr. Murtha. The Department of the Navy budget for fiscal year 1987 requested the funding for eight DIFAR/DICASS capable SQR-17A systems. The Department projection for fiscal year 1988 is for an additional six systems.

The Committee understands that the Navy plans to close out procurement of this essential equipment after a total of 77 units have been purchased. Is this accurate?

Admiral Metcalf. Yes, 77 units.

Mr. Murtha. It is also our understanding that there are approximately 130 ships in, or planned to be in the inventory, that are LAMPS MK-1 capable. The difference between 77 and 130 would create a serious shortfall, would it not?

Admiral Metcalf. This is a complex issue relative to the kinds of equipment we will put on reserve ships. It is also an affordability issue that we are struggling with right now.

Mr. Murtha. Answer that for the record and also provide the Navy's plans for allocating this DIFAR/DICASS capability to the ships of the following classes: FFG-7 (Reserve); FF-1040; FFG-1; CG-26; CGN-35; and Famous Class Coast Guard Cutter?

[The information follows:]

The Navy plans to provide DIFAR/DICASS capability to all LAMPS MK I capable ships. The means to provide this capability differ between ship classes. Navy plans to provide the FFG-7 NRF ships with the SQQ-89 system which has embedded in it the SQQ-28 acoustic processor capable of DIFAR/DICASS.

The Navy standard acoustic processor for aircraft is DIFAR/DICASS capable and is planned for installation in the LAMPS MK I (SH-2F) upgrade helicopter giving the aircraft capability autonomous of the data link to the ship. The WHEC 378 class Coast Guard cutters will begin receiving the new SQR-17A(V) processors this year.

Planned mission scenarios for CG-26 and CGN-35 class ships dictate a lesser required ASW capability, and the FF-1040 and FFG-1 class ships will reach the end of their useful service lives in the 1990's. It is not cost effective nor affordable to equip these ships with the new SQR-17A(V). The LAMPS MK I (SH-2F) upgrade helicopter can be assigned to these ships should there be an urgent requirement for more ASW capability.

Mr. MURTHA. What is your out year funding profile for the SQR-18 towed array sonar?

Admiral METCALF. I would have to take that for the record.

[The information follows:]

The outyear funding profile for the SQR-18A and SQR-18A(V) Tactical Towed Array Sonar is as shown below:

[Dollar amounts in millions]

	Fiscal year—				
	1987	1988	1989	1990	1991
Amount	$28.7	$37.9	$15.2	$58.5	$60
Quantities:					
SQR-18A(V)1	3				
SQR-18A(V)2	3	5	2	10	5

The balance of funding procures array spares, cables, engineering change kits and peripherals for installed SQ-18A/SQR-18(V) systems.

Mr. MURTHA. We have been advised that the Navy is actively considering putting SQR-19 towed array sonars on a vast majority of the Reserve and other LAMPS MK-1 capable ships. Is this accurate?

How far has this proceeded through the Navy and OSD review process?

Under current funding constraints, is this an affordable venture?

[The information follows:]

The USN is actively considering a plan to install the AN/SQQ-89 ASW Combat System, which consists of the AN/SQR-19 TACTAS and SQQ-28 LAMPS sonobuoy processor, on the 18 FFG-7 class frigates to be assigned to the Naval Reserve Force. This plan is to be presented for approval to the Secretary of the Navy in April as a POM-88 issue. It will then be submitted to OSD for review.

In view of the rapidly evolving and improving Soviet threat, installation of the SQQ-89 in these ships is essential. The first production SQR-19, installed in USS CURTS (FFG-38), is at sea demonstrating its capabilities today. The operations clearly show the SQR-19 to be a far more capable system than the SQR-18A(V)2, not only in detection performance at higher speeds and longer ranges, but also in tracking and passive localization accuracy, operability, and contact data handling capability.

The Navy will also realize numerous other benefits from this upgrade. The 18 NRF FFG-7 class frigates and their 33 active force counterparts will be similarly equipped. This will pay off in the areas of logistic supportability, force interoperability, and training requirements. Finally, this plan permits us to include these 18 NRF frigates in our SQQ-89 improvement program, threat-responsive upgrade which develops a low frequency active adjunct for these ships, and uses the SQR-19 as a high gain receiver. This will provide these primary ASW ships with a capability equal to the projected 1990's threat not possible with the short range SQS-56 hull mounted sonar. The emerging threat mandates focus on the best equipments and systems available and funding to support the enhanced capability will be indentified in the POM process.

Mr. MURTHA. Provide for the record a detailed out year funding profile for the SQR-17A, SQR-18 and the Navy's plan to place

SQR-19 on the low-mix ships, and specifically note when the funding is for a reserve or low-mix ship.

[The information follows:]

The FY-86 contract for 20 SQR-17A systems represents the final year of funding for this system if the proposal to put SQQ-89 on the NRF FFG-7 class is approved. Unfunded requirements exists for AN/SQR-17(V)3 ALE modifications for the AN/SQR-17(V)1's not upgraded to AN/SQR-17A(V)'s. This affects the FFG-1's, CG-26's, CGN-35 and some O/M trainers. Also, requirements for SKR-4A modifications to improve reliability and enable LAMPS I/III processing by the AN/SQQ-28 exist. These requirements should be met as soon as practical. The Navy's proposal is to divert FY-87 funding requests for AN/SQR-17A(V) to meet these additional requirements if the new program structure is approved.

The out year funding profile for the SQR-18A and SQR-18A(V) Tactical Towed Array Sonar for low-mix FF-1052 and FFG-7 Class ships is as shown below. Quantities for the Naval Reserve Force (NRF) FF-1052 and FFG-7 Class ships are shown in parentheses:

[Dollar amounts in millions]

	Fiscal year—				
	1987	1988	1989	1990	1991
Amount	$28.7	$37.9	$15.2	$58.5	$60
Quantities:					
SQR-18A(V)1	3(0)				
SQR-18A(V)2	3(2)	5(4)	2(2)	10(10)	5(4)

The balance of funding procures array spares, cables, engineering change kits and peripherals for installed SQR-18A/SQR-18(V) systems.

The out year funding profile for the SQR-19 Tactical Towed Array Sonar is as shown below. Quantities for low mix ships (FFG-7 class) are shown in parentheses:

[Dollar amounts in millions]

	Fiscal year—				
	1987	1988	1989	1990	1991
Amount	$112.4	$100.2	$72.5	$37.7	$40.2
Quantitites: SQR-19	10(4)	10(1)	7(3)	3(0)	3(0)

There are no Naval Reserve Force FFG-7 class ships reflected in this procurement plan. A plan to procure AN/SQQ-89 ASW Combat Systems (SQR-19/SQQ-28 sonobuoy processor) for the NRF FFG-7 class and install them concurrently with their active force counterparts is under consideration. This configuration will increase Reserve-Active force commonality and greatly improve the capability of the NRF FFG-7 class to counter the improved Soviet threats of the 1990's and beyond.

Mr. MURTHA. Mr. Dicks?

T-AGOS

Mr. DICKS. I understand a subject dear to my heart did come up, the future fate of the T-AGOS program.

I know that the Navy has been very conscientious and helpful in analyzing all the proposals. I know Tacoma Boat has made one final proposal to the Navy, and it is under consideration.

I have appreciated your willingness, Mr. Secretary, to work with the gentleman from Washington and the way you have proceeded on this. It has been very painful for us out in the State of Washington, because the shipyard is a principal employer in that area, and the ships that have been produced up to this point have been quite good. Although we can't get into classified information, I know that the Navy has been quite pleased with the effectiveness of those ships, and the Navy is concerned about getting additional ships.

I hope the Secretary will take a look at that final proposal, and I will be glad to talk to him later. I just wanted to make that opening statement.

Mr. PYATT. Now I have had it from both sides.

PUBLIC/PRIVATE OVERHAUL COMPETITION

Mr. DICKS. In fiscal year 1985, a competition between public and private shipyards was initiated on a test basis. The plans call for the overhaul of two ships on the Pacific coast, and two on the Atlantic.

One overhaul would be awarded the private sector, and one in the public sector, and the comparative performance would be evaluated. What is the status of this competition?

Admiral ROWDEN. There was a competition that was established in 1985. There were two ships involved, both on the West Coast, and one is Duluth, awarded to Northwest Iron Works in Portland, Oregon. She is 50 percent through her overhaul at the present time.

The other ship is Cleveland, not awarded at the present time, and we anticipate her going to the Long Beach Naval Shipyard. We expect both ships will be completed by the first part of next calendar year, at which time we will do an underway material inspection to determine the quality of the overhauls in the two ships.

At that time, we can make a reasonable comparison between the two.

Mr. DICKS. For the record, if you might, flesh out how the Navy intends to evaluate the results of this particular competition. What considerations will be given to the unique situations facing public and private yards, especially in regard to employment rules in these kinds of future competitions?

Admiral ROWDEN. The difficulty, in our view, is a considerable difficulty on the part of the public yards on employment rules. We are under Civil Service rules, as you know.

We are working now to determine changes and modifications that must be made to those rules to permit us more fluidity in the movement, and in the shaping of the work force.

Mr. DICKS. A second increment of such a competition was included in the fiscal year 1986 appropriation. What is the status of this effort?

Mr. PYATT. Eight ships have been selected, two nuclear ballistic missile submarines, and four conventional ships on the West Coast, and two on the East Coast. We think it is a competition, it has been beneficial in the Navy yards to sharpen them up.

Mr. DICKS. Does the Navy consider public-private competition to still be in an experimental phase, or will you be going forward regardless of the final evaluation of these two test programs?

Mr. PYATT. Clearly, we need to learn our lessons as we go along, but both the public and private sector are quite capable of producing good overhauls, and I think we are transitioning from an experimental phase to an operational one.

Mr. DICKS. I also understand the Navy is planning for competition among public yards for those classes of ships that only they can handle, nuclear submarines, for example. What is the status of this effort, and how will these competitions be conducted?

Mr. PYATT. The first one is the SSBNs, and the first competition was held between Newport News and Charleston. There are more Navy yards capable of overhauling those classes of ships.

Mr. DICKS. As you look to the future, assuming that we are able to not only complete and reach our goal of a 600-ship Navy, and also be able—avoiding the possibilities of Gramm-Rudman-Hollings to construct an alternative budget to give us the personnel to man those ships, how do you see the future for the public shipyards in this country?

Mr. PYATT. I see the future, everything we do, very much under the pressure cooker of squeezing every nickel out that you can, and the public and private sector should feel that pressure equally.

PUBLIC SHIPYARD FUNDING REDUCTIONS

Mr. DICKS. And as part of that, last year, you reduced the funds available for the public shipyard by $500 million, from the industrial fund, I think that is correct?

Mr. PYATT. Yes, sir.

Mr. DICKS. How has that worked? How are the shipyards holding up in bringing down their costs, overhead, et cetera?

Admiral ROWDEN. That is in 1987 the $500 million cut will be levied. We have taken steps——

Mr. DICKS. I thought that was in the 1986 budget.

Admiral ROWDEN. No, sir, in 1987, Mr. Dicks. At the shipyards, we have squeezed down overtime, worked very hard on overhead, on work rules. We have worked hard on material management. We worked on those things that are cost drivers in a shipyard.

We believe that we are seeing results now in getting us in position to be able to start to handle this cutback of $500 million next year. Our goal is to produce the same scope of work with the same quality, but for less money.

Mr. DICKS. Somebody told me one of the keys to all of that is going to be whether the Navy bureaucracy in Washington, D.C. stops tasking the shipyards to do a lot of things that are not necessary.

If they are going to compete, they will have to be treated with more autonomy and be able to manage things out there in a way to get those costs down.

I am not saying that anybody ever talked to me from a public shipyard, but I have been told one of the reasons their overhead is high is because of Navy regulations, bureaucracy and everything else. They get tasked to do a lot of things they simply don't have to do in a private shipyard.

Is the Navy looking at that, to see if they will be helping these shipyards be competitive?

Admiral ROWDEN. Absolutely.

Mr. Pyatt. One of the things that competitive pressure does is put pressure every place and ideas like this come out, and shipyards have been tasked to do things that bear no relation to the outcome of overhauling a ship.

It is the same thing the private sector has to do from time to time, cut back overhead. We hope to expand it.

Mr. Dicks. How did you decide on $500 million? Did you pull it out of the hat, or was it just what you thought might be a good goal?

Mr. Pyatt. It could have been $502.3 million. We took a look at some of the kinds of problems that our analysts had identified in terms of potential for cost reduction, and then made a calculation and rounded it off—down, by the way.

Mr. Dicks. How are allocations being made to individual shipyards in imposing this reduction? If you want to answer that for the record, that is fine with me. Give us a general idea.

Admiral Rowden. Allocations to private——

Mr. Dicks. In other words, some of these yards are more efficient, Admiral, and it seems to me that the ones that are the less efficient should be asked to do more in terms of improving their efficiency.

It is often a fact of life under Gramm-Rudman-Hollings, if you have already cut the budget and got lean, then you come in and have an across-the-board approach, you get penalized like the other guys, so there is no incentive to take care of your problems?

Admiral Rowden. The reality, Mr. Dicks, is that the $500 million was apportioned among the eight Naval shipyards and asked them to take their apportioned amount and divide it among the various tasks, wherein they were going to make reductions, and got the shipyard commanders together, debated and parried, worked on these particular numbers, and ultimately had total agreement. That is the way we will go forward.

Mr. Dicks. I think you do a good job of this. You called them in and they worked with you. I have been very impressed, by the way. The personnel cuts of a couple of years ago, that was handled very nicely. A goal was set and a rolling readjustment was made, reasons were set in. I was quite impressed with that.

You state that major improvements will result from returning authority commensurate with the responsibilities to active commanders. What types of decisions are you going to decentralize in this respect?

Admiral Rowden. What we are decentralizing in this respect is the ability for the shipyard commander to determine what work he can take on, determine the costs of that work, and determine how that work is to be completed.

What we are trying to unload from him are those things in overhead which properly may have to be done, but should be done at headquarters.

Mr. Dicks. What other steps are being implemented as part of this $500 million reduction effort? Have you pretty well described it?

Admiral Rowden. Yes, sir.

Mr. Dicks. Are any outside studies underway in ways to improve management efficiencies in Navy shipyards?

Mr. Pyatt. Yes, we have contracted with the accounting firm of Coopers and Lybrand to look at all of our industrial activities. Shipyards were the first, and they were followed by the R&D establishment, ordnance stations, and out of each comes a different set of problems.

Shipyards was the first one.

Mr. Dicks. Those studies will go on now for the next several years?

Mr. Pyatt. The initial part of the studies will be complete in the next few months, and then we will have implementation actions to carry out over a longer period of time. They will be contracted out competitively.

SHIP REPAIR POLICY AND STRATEGIC HOMEPORTING

Mr. Dicks. The creation of several new home ports under the Navy's plan to disperse the fleet, which I have strongly supported, should have some impact on a ship repair industrial base.

Could you briefly explain the impact of strategic home porting on the ship repair industry of these new home ports?

Mr. Pyatt. The ship repair industry will involve the home ports, because work goes on of a repair nature, and we believe it should be done in home ports. That kind of industry tends to follow the fleet, it has been our experience every place in the country.

Mr. Dicks. Using the carrier battle group going into Everett, Washington, as an example, what would be the extent and type of work planned for an average year to be reserved in that new home port, and we will do this for the record, and be as specific as possible.

[The information follows:]

It is assumed that a fourteen ship carrier Battle Group (CVBG) would be assigned homeports in Everett, Washington. It is additionally assumed that the composition of the Battle Group would consist of 1 CVN, CGNs, 2 CGs, 3 DDs, 4 FFGs, 1 MSH and 1 MCM. Five of the fourteen ships in the battle group are normally overhauled (ROH) in public shipyards and the remainder are overhauled in the private sector. The interval between overhauls for these ships is nominally five years with two selected restricted availabilities (SRAs) occurring between overhauls. These SRAs are normally assigned to the homeport private sector, when adequate competiton exists. The following is a table of maintenance calculations:

[In million of dollars]

	CVN	CGN	CG	DD	FFG	MSH	MCM	Notes
ROH	152.0	55.0	45.0	33.0	34.0	3.5	4.0	1
RA/TA	6.0	3.0	2.5	2.0	.7	.4	.4	2/3
SRA	20.0	5.0	3.5	2.5	2.1	1.0	1.0	4
CIS	.5	.4	.35	.3	.3	.2	.2	5

Notes: 1—Cost/ROH. 2—Per year. 3—Restricted availability/technical availability. 4—Cost/SRA. 5—Contractor industrial services.

The table above provides average cost data, adjusted to the Pacific Northwest, which can be extrapolated to provide a reasonable economic impact of ship's maintenance for the units involved.

AVERAGE ANNUAL PRIVATE SECTOR MAINTENANCE COST

	Amount (millions)	Mandays (thousands)	Notes
ROH	$48.7	139.1	1
RA/TA	15.2	43.3	
SRA	18.0	51.4	1
CIS	4.5	12.9	
Total	86.4	246.8	

Note: 1—Adjusted to an annual figure.

A reasonable estimate of ship's maintenance costs for private sector accomplishment for the CVBG homeport in the Pacific Northwest is $86.4M per year (approximately 975 manyears/year.)

Mr. Dicks. It just seems to me, for example, up in the Puget Sound area, where we have had some problems competing on new construction, that certainly having that battle group at Everett is going to help those yards be in a position to compete, I would hope, for overhaul and repair work. Obviously, the nuclear work, the carrier, two cruisers, might fit well into the activities of the Puget Sound Naval Shipyard.

So I would appreciate your giving me some background on that. Considering that most of the strategic home ports are at least two to three years away, and the lack of work currently available to repair facilities in these home port areas, aren't you concerned that much of the industrial base will be gone before the fleet arrives?

Mr. Pyatt. We still have the rest of the fleet to care for around the country, and it is growing, even though the ships are more reliable and required to be in the yards less often, still, the quality of the work for Navy work is growing.

Mr. Dicks. It seems to me with homeporting you are going to be able to take advantage of those facilities that are there, like Lockheed, and the Puget Sound Naval Shipyard. In that respect homeporting makes sense, because in traditional major ports, such as San Diego where you have 130 ships, 100 in Norfolk, and some 68 in Charleston, that as I understand it, you are having to bring people in to do those SRAs. I think the homeporting will take advantage of existing industrial base.

Mr. Pyatt. I hope the rest of the Congress understands the wisdom of that view.

Mr. Dicks. We are trying to educate them.

Mr. Murtha. The gentleman from Pennsylvania.

Mr. McDade. Mr. Secretary, I want to welcome you and your associates in front of the committee. It is a pleasure to see you.

Mr. Pyatt. Thank you, sir.

SPECIAL WARFARE CRAFT MEDIUM

Mr. McDade. Last year, Congress denied all funding associated with the Special Warfare Craft because of technical problems and delivery slippages. Original plans called for delivery last October. After several revisions, delivery is now optimistically scheduled for September. Could you give an update on the Special Warfare Craft program?

Admiral **Rowden**. That is what we understand the delivery to be now, Mr. McDade. The company has had continuing problems in production and in management. They are very good engineering wise. They have had difficulties in those other areas.

Mr. **McDade**. Do you think September is a good, hard date?

Admiral **Rowden**. It is as hard as we can give you now, yes, sir. But my confidence factor is not high.

Mr. **McDade**. In January of this year, Navy officials stated 90 percent of the drawings have been released and that the contractor estimated completing the drawings by January 31. Did the contractor actually complete and release the remaining drawings?

Admiral **Rowden**. I will have to provide that for you. I don't know that.

[The information follows:]

Drawing submittal for the Special Warfare Craft Medium (SWCM) is now at 95%. The contractor is obviously not applying scarce resources to completing drawings until they are needed for production because of his difficult cash flow situation. This does not violate his contractual requirements. It is estimated that the seven remaining drawings will not be submitted until about May 86. The drawings he has completed are termed "preliminary" because they have not yet been fully validated during construction. Fully validated final (or "as-constructed") drawings suitable for use in reprocurement are required to be submitted after delivery of the craft.

Mr. **McDade**. Since your budget request includes funding of one Special Warfare Craft, what assurances does the Committee have that this first craft will actually be completed and delivered to the Navy?

Admiral **Rowden**. I believe, Mr. McDade, you have only the assurance that we have discussed thus far. We believe that the craft will come forward. We think that the company understands how to perform and produce the craft, and we believe that will happen.

Mr. **McDade**. The contractor for the Special Warfare Craft remains in a serious financial condition. This is not the first time awards have been given to companies that are having financial difficulties. What actions have been taken to tighten up your pre-award surveys?

[The information follows:]

RMI was not having financial difficulties at the time of SWCM award. Their present very serious financial condition is due to business decisions, unrelated to the SWCM contract, subsequent to our contract award. At present we are satisfied with our pre-award surveys. The instances where craft acquisitions have suffered from contract or financial problems have occurred primarily in two areas: when SBA has issued a certificate of competency subsequent to a negative pre-award survey or when the company takes actions after award that adversely affect its financial posture.

Mr. **McDade**. If Congress chooses to fund the Special Warfare Craft issue, would you conduct a full and open competition, and if so, would this be a build-to-print type of contract award?

Admiral **Rowden**. May I provide that for you? The answer is we would certainly do a full and open competition, and I believe it would be——

Mr. **McDade**. If there is any amplification you need for the record, please notify the staff and do it for the record.

Admiral **Rowden**. Yes, I will.

[The information follows:]

NAVSEA developed a plan of action in November and December 1985 which initiated decisive actions to minimize overall program risks. We commenced developing a second source for SWCM production. Initiation of this course of action establishes a parallel lead craft effort which mitigates the cost and schedule impact of any additional delay by RMI in making delivery of their SWCM. This alternative was developed with a desire to be in full compliance with the House Appropriations Committee (HAC) language: "Additionally, the Committee directs that the Navy award this contract on a competitive basis in order that a second source can be developed for future Special Warfare Craft Procurements." This HAC guidance, together with our desire to maximize future SWCM competitive procurement formed the basis for our acquisition strategy.

NAVSEA has developed a Technical Data Package (TDP) based on existing RMI lead-craft construction drawings and associated technical data. This TDP (with a disclaimer that the RMI drawings and data are provided for information only) will be incorporated into the solicitation package for a second lead-craft construction contract.

We are currently considering award for a second lead craft which will consist of: Phase I—contract design and incorporation of producibility improvements into the RMI design; Phase II (a contract option)—second lead craft detail design; and; Phase III (a contract option)—second lead craft production. This will help ensure that full design and producibility improvements precede start of second lead craft construction.

Award is planned for October 1986. This acquisition will be made on a full and open competition basis (with the exception of RMI) with each offeror developing his own proposal, including producibility improvements needed to meet the requirements of the solicitation. Competition for all follow-on craft will be between RMI and the winner of the second lead-craft contract.

STRATEGIC SEALIFT ENHANCEMENTS

Mr. McDade. Your fiscal year 1987 request for strategic sealift enhancements amounts to $20.7 million, and these funds, according to your justification material, provide for the installation of sealift enhancement features on U.S.-flag commercial ships which would provide militarily useful features at mobilization. Could you tell us what type of military features, or enhancements, you plan to install?

Mr. Pyatt. We put that in to try to provide a fund to take the place of what used to be the military features that were included under the subsidy programs. We do not have at this time a specific proposal from a proposed ship owner to put these in. We are hopeful that some will evolve.

Mr. McDade. When would you get it, Mr. Secretary? How soon?

Mr. Pyatt. They don't know whether we are going to get the money. It is kind of a chicken-and-egg situation. They don't know if we are going to get money and the shipbuilding industry right now is in turmoil right now, as you know. If it doesn't happen, I would like to go back to the market and buy some more used ships like we have been doing. We have been pulling in a lot of bargains and now is the time to build our sealift.

Mr. McDade. Is there a lot of R&D work that went into this effort?

Mr. Pyatt. No. No R&D is needed.

Mr. McDade. And none needs to be done?

Mr. Pyatt. No.

Mr. McDade. You would have no idea about awarding a contract, no idea of time for the installation work?

Mr. Pyatt. No. Again, we have to have a program and get proposals of people that have something to do. Admiral Rowden.

Admiral ROWDEN. We are talking about things that are not terribly sophisticated. For example, beefing up the points in a container ship along the guides, where weights are borne such that we can put devices in those guides to carry tanks, trucks and things like that. We are talking about some things, improvements in communications as I recall, which are kind of state-of-the-art, so it is not a great deal of engineering.

Mr. PYATT. This is the piece that makes the sea sheds useful in the container ships.

HOSPITAL SHIPS

Mr. McDADE. That is interesting. Let me direct your attention now to hospital ships. Mr. Secretary, Congress, several years ago provided over $530 million to procure two hospital ships. Delivery of the first ship is scheduled late this year, with some optimism that delivery could be as early as this coming June. Once delivered, what do you intend to do with these ships, particularly since you face specialty shortages in the medical professions?

Mr. PYATT. The plan on these ships has always been to build them and put them in the reserve fleet, or convert them and put them in. That was our very first explanation we made, and that plan hasn't changed.

Mr. McDADE. Dr. Mayer, the Assistant Secretary for Health Affairs, recently stated before the committee, "It is somewhat wasteful to stockpile anything because if you don't use it, it eventually deteriorates. This is why I want to use the hospital ships cruising in the area of their possible deployment, but we can successfully stockpile and in my judgment we must not only stockpile, but place oveseas hospital assemblages in almost all the areas where we might need them." Are Dr. Mayer's plans for the hospital ships in line with your current plans?

Mr. PYATT. The only thing we have in our program as far as I can recall is to take the ships and put them in a reserve capacity.

Mr. McDADE. Reserve capacity?

Mr. PYATT. There has been some discussion at various times about using them, but we are not funded for that. As I recall, we have crews available for short-time mobilization. That is as far as our plan is extended.

Mr. McDADE. Are you worried about the medical shortages that you might face in these ships? Is that a concern?

Mr. PYATT. Other people are better able to answer. I just build ships. That is the program I would like to talk about. The program has gone very well. It is early, under budget. A good job has been done.

Mr. McDADE. Thank you, Mr. Chairman.

IMPACT OF REPAIR POLICY ON SHIPYARD MOBILIZATION BASE

Mr. AuCOIN. Secretary Pyatt, in 1985 your office released a report on the shipyard mobilization base. The report was a follow-on to the 1983 study on the same issue. I would like to discuss the unclassified aspects of these reports and the effect your ship repair policies have on maintaining the mobilization base.

The 1983 report contends that a requirement exists to maintain a basic inventory of 119 shipyards (9 public/110 private) with the ability to build or repair ships over 400 feet in length. I have also read statements in which you state that a base of over 90 public and private facilities are required. Which is correct, 119 which is in the report that your office released, or the 90 that you have been quoted?

Mr. PYATT. It all depends upon the assumptions you make going into the study. You can have any number ranging from zero to infinity.

Mr. AUCOIN. Are you changing your assumptions?

Mr. PYATT. Yes, sir. That is the difference in these two reports. There are different assumptions about the kinds of conflicts that are involved from which evolve different numbers, but I would like to say a bit about those reports. That as we thought through them—and I think I testified in the same regard in the authorization committee the other day, and you were there—that it became clear that the repair base was more important than the shipbuilding base, and it was from that that we have developed our policy of coastwide overhauls, and the other activities that we have taken on to maintain the ship repair base.

Mr. AUCOIN. Given the assumptions we are working on now, which of those numbers comes closest to being the number of the committee?

Mr. PYATT. The lower one.

Mr. AUCOIN. The 90?

Mr. PYATT. Yes.

Mr. AUCOIN. How would that split work between public and private?

Mr. PYATT. I can't really answer that. I will have to do that for the record.

Mr. AUCOIN. Would you.

Mr. PYATT. I am not even sure you can, the way the study is put together. I will do the best I can.

[The information follows:]

The first study, The Shipyard Mobilization Base (SYMBA) Study, was completed in February 1984. The follow-on study, the National Defense Shipyard Study (NADES) was completed in February 1985.

The premise of SYMBA was to define a set of firms which could be considered capable of performing major mobilization work in the areas of shipbuilding and ship maintenance and repair. We cataloged 9 public and 110 private yards on that list as of October 1, 1982. The Maritime Administration assists us by keeping track of the firms currently qualified to be on the list. In the SYMBA study we next defined the workload requirement for a late-1988 mobilization. Without being terribly worried about specific yard qualifications in our wartime work scheduling simulation, we determined that the first year requirement was for facilities which had 51 building positions and 97 drydocks or basins. In the study this equated to about 112 of the 1982 list of yards.

Arising out of a concern about the number of yards which were closing, the NADES Study was done to determine whether mobilization tasks could still be performed in a *hypothetical* case in which there were only 66 yards available. That study also updated several assumptions and the status of Navy programs to reflect an October 1984 perspective on a 1988 mobilization. We found that a set of about 64 yards, very similar to those doing business with the Navy on a regular basis, were satisfactory for initial mobilization work. These yards contained 49 building positions and 123 docks and basins.

I would like to stress that we have not defined a *requirement* for a certain number of yards or facilities. What we are doing is conducting periodic assessments of the available mobilization base to determine capability to perform mobilization tasks. Thus far, we see no reason for concern about the number of shipbuilding and ship repair firms.

Having said that, let me answer your specific question on the public/private split of mobilization work. Based on our *latest* comprehensive study, NADES, the split of work, *as projected to 1988*, was 30/70% in terms of production workers at the point mobilization started. After 9 months the wartime split of work changed to 33/67%.

Mr. AuCoin. Based on the latest information available, how many public and private yards with this capability are in business today?

Mr. Pyatt. I will have to provide that for the record. There are a lot of small ones that went into the 90. I don't have this at the tip of my tongue.

Mr. AuCoin. Roughly how many would you say today?

Mr. Pyatt. I would say most. We are winning it. I think it is 70 or more.

Mr. AuCoin. Seventy or more?

Mr. Pyatt. Yes. There have been in the last year, as you know, some closures.

Mr. AuCoin. Right. How does that number that you have just cited compare to three years ago and then to 10 years ago? If you don't have that, would you supply it for the record.

Mr. Pyatt. It is all very critical on what the going-in assumption is.

Mr. AuCoin. We are just talking about hard numbers, though. How many exist today as compared to five years ago?

Mr. Pyatt. I am sorry, I will give you that.

Mr. AuCoin. Is it less or more?

Mr. Pyatt. It is less. It is less than historically.

Mr. AuCoin. Substantially less?

Mr. Pyatt. I don't know what substantially means. There has been a decline.

Mr. AuCoin. Can you identify by geographic area the changes that have occurred in the mobilization base over the past 10 years, in charting that, where you have seen most of the decline?

Mr. Pyatt. By region? Yes, we can do that.

Mr. AuCoin. I am sure you know offhand. Where does that tend to be most pronounced?

Mr. Pyatt. I don't know offhand. The Gulf Coast has been hardest hit with the oil turndown in the last few years, but there have been hits all around the country. I would have a rough time saying exactly how it works out, all the small ones considered along with the big ones.

Mr. AuCoin. In terms of response, can't you tell the committee today where that is, which region?

Mr. Pyatt. No.

Mr. AuCoin. Provide it for the record.

Mr. Pyatt. I will provide it, because it is very close. When we get it all together for you, it is going to look very much the same, I think.

[The information follows:]

The years for which we have comparative mobilization base data are 1978, 1982 and 1985; the criteria for 1978 are slightly different for which yards to include.

	Fiscal year—		
	1978	1982	1985
East coast	28	46	38
Gulf coast	12	33	24
West coast	17	30	27
Great Lakes	[1] 8	6	5
Hawaii	1	3	2
Puerto Rico	1	1	1
Base	67	119	97

[1] Includes inland yards in Missouri, Ohio, and Illinois.

Mr. AuCoin. Is it in the Navy's best interest to have a geographically dispersed mobilization base?

Mr. Pyatt. Just like you would like to have a geographically dispersed Navy.

Mr. AuCoin. It is, then?

Mr. Pyatt. Yes.

Mr. AuCoin. Your current policy is to reserve SRAs and PMAs for homeport areas. Doesn't this policy run counter to the need to maintain a geographically dispersed mobilization base?

Mr. Pyatt. As we have gone through several times, we have run into several conflicts here. One is that you like to have the mobilization base available. Then you have the practical problems that Admiral Metcalf described of taking care of the fleet and the people.

Mr. AuCoin. But you would identify that as one of the conflicts?

Mr. Pyatt. Sure, yes, sir.

Mr. AuCoin. How can you expect non-homeport shipyards to remain in business and remain a part of the mobilization base, when the only work they can even bid on are the ever-decreasing number of regular overhauls, since you are moving so aggressively, to SRAs and PMA.

Mr. Pyatt. This is again one of the conflicts that exists. We are also in a situation where the overhauls which occur are larger in scope than they have been in the past, and a larger amount of work. Just looking at numbers alone is not the final answer.

Mr. AuCoin. That is another conflict?

Mr. Pyatt. Yes.

SHIP REPAIR COMPETITION

Mr. AuCoin. The Navy has been one of the leaders in increased competition, particularly under Secretary Lehman, and this Committee has been concerned about competition too and the possible lack of competition on ship repair. Can you tell us the number of regular overhauls to be competitively bid coast-wide to private users in fiscal years 1985, 1986, and 1987?

Mr. Pyatt. I will furnish that for the record but it has been a very large number.

Mr. AuCoin. You will provide that for the record?

Mr. Pyatt. Yes.

[The information follows:]

The number of active fleet regular overhauls that have been and that are scheduled to be competitively bid coastwide to private users in FY85, 86 and 87 are 28, 14, and 16 respectively.

Mr. AuCoin. Can you tell us the total number of SRAs and PMAs programmed for private yards again for fiscal year 1985, 1986, and 1987?

Mr. Pyatt. I will provide that for the record.

[The information follows:]

The total number of SRAs and PMAs programmed for private shipyards plus competitions which could go to either public or private shipyards for FY85, 86 and 87 follows:

	Fiscal year—		
	1985	1986	1987
SRA's	71	55	76
Competition		2	5
PMA's	13	27	34

Mr. AuCoin. In the case of the regular overhauls, the number has been going down, though, hasn't it?

Mr. Pyatt. Yes, it has.

Mr. AuCoin. In the case of SRAs and PMAs the number has been going up?

Mr. Pyatt. The number has been going up but you have to look at the dollars also.

Mr. AuCoin. We have seen some figures from prior years where, for repair work reserves for homeports, there have been many instances where the Navy has received only two or three bids. When compared to the eight to 12 bids received on coast-wide competition, don't you agree that a case can be made for lack of adequate competition in homeports?

Mr. Pyatt. I don't know whether it is law or government-wide regulation that two or more is competition.

Mr. AuCoin. One isn't right. Two is better than one. Wouldn't 12 be better than three?

Mr. Pyatt. Not necessarily. It depends on what you get out of it.

Mr. AuCoin. Dealing with likelihoods, wouldn't you say likelihood is?

Mr. Pyatt. If in a situation you expand from a low-cost area to a high-cost area, going to higher numbers is unlikely. It just depends. If you expand from a high-cost area to a low-cost area, it is likely. So it depends.

Mr. AuCoin. I think the question is especially important since your own regulations state that you can only reserve work for homeports "provided adequate capability capacity and competition exist."

Mr. Pyatt. That is right. And when we have a situation in the homeports where we don't have competition, we expand it to a broader area. It doesn't happen very often now. It used to happen.

Mr. AuCoin. A number of times on the West Coast there have been opportunities for non-homeport private yards to bid. They have been consistently successful in bidding. So the point I am driving at is——

Mr. Pyatt. I wouldn't make that statement. I would like to furnish that for the record, the wins and losses. That is not true.

[The information follows:]

For the period of FY83 through the second quarter of FY86, there were sixteen West Coast regular overhauls solicited on a coastwide basis. Of the sixteen, twelve ships were awarded to homeport contractors and four were awarded to contractors outside the homeport area.

Mr. AuCoin. What is the Navy doing to ensure there is fair and adequate competition for repair work reserved for homeports?

Do you have a program?

Mr. Pyatt. People are begging for the work. We don't need a program.

Mr. AuCoin. You don't have to ensure it?

Mr. Pyatt. No. Do you know of any cases where we haven't met competition?

Mr. AuCoin. If they are begging for work, why are there only two or three bids then? If they are that hungry.

Mr. Pyatt. Maybe this is the issue of what is adequate. I don't recall anything in the recent couple of years.

Mr. AuCoin. Let me ask the question again. If the Navy sees this hunger as its means to ensure the competition, why is it that in some of these homeport yards, where there are far more than two or three potential bidders, that we consistently see two or three bids? That doesn't sound like a hungry pack of bidders to me.

Admiral Rowden. I am not sure of your assertion that we consistently see two or three bids.

Mr. AuCoin. You are not?

Admiral Rowden. No, I am not sure of that.

Mr. Pyatt. I am pretty sure it is wrong. Let us furnish some statistical data for the record.

Mr. Murtha. It is more than that?

Admiral Rowden. Yes, there are.

[The information follows:]

Private Sector Regular Ship Overhauls and Selected Restricted Availabilities being conducted in San Diego were reviewed to determine the number of bids/offers received. A total of 13 availabilities were examined. This revealed that 7 out of 13, 54 percent, had 4 or more bids submitted in response to solicitations.

Mr. AuCoin. Let me just ask you to provide for the committee's files for fiscal years 1985 and 1986, to date, by each homeport area, the number of bids received for each SRA and PMA repair contract, by ship, what the high and low bids were and what the government estimate was. You can provide that for the record.

Mr. Pyatt. High and low bids and government estimate I think is something we prefer not to put in the public record.

Mr. AuCoin. The Committee would like you to provide it for the record.

Mr. Murtha. Let's have it sent up so you can take a look at it rather than saying it is going in the record.

Mr. AuCoin. How about the classified section?

Mr. Murtha. Let's just have them send it up and let the gentlemen look at it. I think you can get privileged information and then we will take a look at it and make a judgment.

Mr. AuCoin. Would the chairman agree to have it sent to the Committee, to be addressed to the Committee, the Members of the Committee.

Mr. Murtha. Send it to the Committee and let the Committee decide.

Mr. Pyatt. It will be classified business—privileged.

Mr. Murtha. We won't put it in the record without coming back to you.

Mr. Pyatt. It is very sensitive information to the shipbuilders and to the people that have to compete.

Mr. Murtha. I understand.

Mr. AuCoin. I understand.

[Clerk's note.—The Navy notified the committee that the requested information is Business Sensitive and that it would be provided to the Committee separately. However, as of the date of printing this hearing, the information had not been provided for the committee's files.]

Mr. AuCoin. My last question is what would be the impact if the Navy pursued a policy which required contracting officers to recompete on a coast-wide basis any homeported SRA/PMA work which receives fewer than four reasonable bids?

Mr. Pyatt. Why four?

Mr. AuCoin. Three then.

Mr. Pyatt. I don't understand the rationale of the hypothesis.

Mr. AuCoin. The hypothesis is fairly clear. If the contracting officer feels that there is an insufficient number of regional bids that have been brought forward for this kind of work, that policy would be to open that to a broader field of potential competition.

Mr. Pyatt. He has that guidance now but the number is not four.

Mr. AuCoin. I thought in the case of SRAs and PMAs that there is no authority at the present time to build those on a coast-wide basis?

Mr. Pyatt. Oh, SRAs, you are right, but we don't have a competition problem. I said earlier we would provide competition statistics on what shows up.

Mr. AuCoin. I look forward to seeing the numbers.

Mr. Murtha. The gentleman from Ohio.

MISSILE ACCURACY

Mr. Miller. Thank you, Mr. Chairman.

We spoke this morning of missiles and yesterday of missiles, and the accuracy that the Soviets have, and I guess we can only go so far in this particular meeting, since it is not closed. But the Soviets and we have great accuracy when it comes to missiles. And with regard to ships that we are going to build, are we finding that we may be going beyond the useful life of large ships such as this?

I know we have a battle fleet, we have the aircraft carrier and a number of different naval vessels in a group, and we have some protection. But with the accuracy that we hear about with missiles today, is it possible that if we had a war that missiles could sink practically everything that we had, and we would be needing to rely on our submarines?

I guess it is kind of a policy question for the long run future. It take years and we spend billions of dollars on our build-up of Navy ships, and then we have another group come in and say: Boy, we could take that out of the water in no time at all.

Mr. PYATT. There are two gentlemen here who have been fleet commanders and have had to worry about that problem on a day-to-day basis. I would like to ask each of them to address it from their perspective. Admiral Metcalf.

Admiral METCALF. You know, this is clearly a question that comes up every year, and that is viability of a ship at sea. If you are going to hit a ship at sea, you have got to be able to find it. It is one thing to be able to shoot from one point with enormous accuracy from one point on the globe to another point on the globe; but the fundamental issue is that you have to find that ship at sea relative to your firing position. It is the age-old problem of targeting. Every form of offensive weapon since the bow and arrow has had that particular problem. Of course the offensive/defensive measures of the guy who is being shot at must also be considered.

We have been very, very successful at foiling the point of aim, and we will continue to do so in the future. I don't have any reservations right now, nor have I ever had in the years I have been going at sea. As the weapons have improved and their accuracy has increased. One of the most difficult things to do at sea is get at a surface ship, that is find it relative to your firing position. We have had that problem since the Constitution went to sea. We have it in our Navy versus the Soviets, and the Soviets versus us. I see it staying with us.

Mr. MILLER. I guess maybe we need to bring you people in together with some of the others that we are speaking to concerning missiles, and let you two talk about it, because we hear the missile people say that we can spot that ship and we can take it out of the water. We can sink it. And now we are hearing that finding it is a problem. We keep hearing that they need more money for missiles and for the R&D that is necessary, and we have already been through a lot of R&D.

The missiles can travel great distances and home in on the ship. With the technology we have today, we are beyond even 10 years ago, when we had the kind of problem we are talking about.

Admiral METCALF. And defenses now are better than 10 years ago. Their ability to defend against and is confuse that missile that has got to travel a long distance is better. Admiral Rowden, perhaps you could add to this.

Admiral ROWDEN. I would make two points, sir. First of all, we are a maritime nation, and our strategy is a forward strategy. We must use the oceans, and we must transport large quantities of material across the ocean, and there is no other way to do it than on the surface of the water. If we tried to put it beneath the water the cost is prohibitive. If we try to fly it over the top of the water, the cost and the energy involved is prohibitive again, so we are sort of stuck with that way of doing business.

I think that it is reasonable that in our weapons arsenal, we would wish to get as far ahead as we can in defeating any opponent's ability to be able to do that, and you are certainly going to hear that from people who wish to build weapons.

Likewise, we also have a responsibility, as Admiral Metcalf said, to protect our ships, which we also have taken very seriously, and have a good capability in that area. So I think given what we must deal with, that is the ability to be able to operate on the surface of the water, we also need both the capability to wage war offensively on the surface of the water, and to defend ourselves as well, and I think we are doing all of those things.

Mr. **Miller**. I am glad to hear you say that you are doing all of that, because as that cork is floating out there in the water, there is a surface ship that can take a crack at it, the submarine from underwater can take a crack at it, planes from the air can take a crack at it. So you have more of a job to protect it, because you have the missiles coming in from all different directions. But you feel that we are doing an ample job at the present time for protection of those ships that we are producing with the funds that are in your budget request today?

Admiral **Rowden**. I believe that we are, and I believe that you will continually hear from us that we should do more.

Mr. **Miller**. Should we do more now, if that is the case? In other words, are there lower priority items in the budget that we should discard, so that we could do more to protect those ships that we have, and those ships that we are now building?

Admiral **Rowden**. No, sir. I would not agree to that. I would agree that the request is balanced, and I believe if we start to pull things out of a lesser priority because they deal with a different part of warfare, that might not be wise.

UNDERESTIMATING SHIP REPAIR BIDS

Mr. **Miller**. In another area, we have articles concerning the private shipyards that we talked about a few minutes ago, that they are consistently submitting unrealistically low bids to win the ship repair job. But then after the ship is in, the overruns are more than the Navy's original estimates of what the job should cost. I don't know that you have answered that one in the dialogue that you had. I did not hear it if you did.

Mr. **Pyatt**. I would like to address that problem, because that is a problem very much like all of us have when we do something so mundane as taking our car in to get it fixed. The problem is in a competitive situation a shipyard may decide to come in low, and then try to get even on change orders. That makes the government's job—and this is an age-old problem I first read about concerning repair work done on the Constitution; it certainly makes the goverment's job in managing the repair more difficult.

Recently we have been analyzing the issue and I have provided a copy of our report to this committee. Recently we have invented a new approach, and it simply says to the shipyard that we reserve some time in this overhaul to do additional work at another yard, provided the prices for new work aren't right. And it is amazing how much the prices have gotten in line.

It has turned out to be a very good procedure in controlling cost growth and ship overhaul, simply to tell the ship rep[illegible] firm that if we can't agree on a price on this change order, we [illegible]ll go someplace else.

Mr. MILLER. I have heard from people who are close to this problem, people in the Navy, and they have said once we get a ship in a yard, it seems like it is impossible to get it out without it costing an additional million dollars, that there are always things that will be found after the ship is in the yard that will put the time schedule back, and will cost more dollars.

So apparently whether it is in foreign yards, on the Atlantic or Pacific coast, it seems like, as I understand it, no matter what yard it is, private or otherwise, it is going to cost more dollars to get that ship out.

Mr. PYATT. What happens is when you go into a yard, there is a certain amount of work we call open and inspect, and that is to take apart and see what is wrong with it and fix it. Once you find out what is wrong and fix it, you make a change order, so it does cost more. We expect that. The problem we are concerned about is controlling it within our target of 20 percent or so growth.

Admiral Rowden.

Admiral ROWDEN. There are two categories of work growth, I believe, sir. One is what is called new work, which is that work which was outside what was specified in the original repair package, and there is growth work. We are attempting to control the growth work so that we stay within a 20 percent increase that the Secretary mentioned.

New work is made available as a result of shipyards that have been properly designed and material that can be made available for installation in the ship or something of that nature. There may be a safety feature, for example, that has become available in the time that the contract has been running that would be wise to put in the ship. That is new work, so there are two diffrent things associated with growth in shipyards.

Mr. MILLER. Are there specifications that you provide a yard on the repair work that is necessary to be done, and then if they find additional work while that ship is in drydock, is there a contract that is separate that can be awarded for that? Are you talking about that type of thing?

Admiral ROWDEN. That is exactly where the problem lies. Suppose that you go into a shipyard and you have a piece of machinery, like a generator, and you have written a job on the generator to open it and inspect it, and determine what is wrong with it.

The yard has been funded to do that work, tear it apart, inspect it, determine what is wrong with it. At that point, you are confronted with a situation of having a ripped-apart generator sitting in a shipyard, with a list of deficiencies in it, and you have a sole source, you may have a sole-source situation with the repair.

Mr. MILLER. If you can't move the ship, you do have a sole source?

Admiral ROWDEN. Yes.

Now, the point is we are working on that specific issue. There are several ways of handling it. We know, for example, that when generators are torn apart that there is a certain menu of things that frequently has to be done to them. It is possible to bid that as an option in the contract, and at that time when we tear the generator apart, and we do determine that these things are wrong, we perhaps can call that already negotiated option into effect.

It will protect us, and at the same time protect the shipyard. We could also renegotiate that work outside the yard, employing a competitive process, wherein the yard that is doing the work can do the work, or we can do it sole-source to the yard. It is painful and expensive to do the sole source in the yard. We are exploring those other ways of handling the cost situation.

Mr. MILLER. Thank you.

Mr. MURTHA. The gentleman from Louisiana.

T-AGOS

Mr. LIVINGSTON. Thank you, Mr. Chairman.

Mr. Secretary and Admirals, to get back to T-AGOS but to a less controversial aspect. The Navy has made the decision to go from two monohull ships to one monohull, and one SWATH (dual hull) design ship. That is going to call for the renegotiation of existing contracts or contract options. Is the Navy in the process of engaging in those renegotiations?

Mr. PYATT. I believe discussions have been opened.

Mr. LIVINGSTON. For FY 1986, it goes from two monohull ships to one SWATH ship?

Mr. PYATT. One SWATH hull and one monohull ship.

Mr. LIVINGSTON. So one of each?

Mr. PYATT. Yes.

Mr. LIVINGSTON. What is the status, then, other than FY 1986 for procuring future SWATH T-AGOS?

Mr. PYATT. Our current T-AGOS plan is all monohull ships to give us time to do the design on the SWATH ship before we get into serial production, and probably the FY 88 ships would be SWATH design, maybe 89. We still have to work that out.

Mr. LIVINGSTON. Are those designs completed?

Mr. PYATT. No, but they are on their way. We should be going out to competition for the first ship here pretty soon. I am not sure of the exact date.

Admiral ROWDEN. It is soon.

Mr. LIVINGSTON. So I would take it those changes are adequate enough for the future so that you don't have to go after additional funds at this point in time?

Mr. PYATT. We have some problems in the SWATH ship and we have to understand exactly for the 86 ships, $10 or 15 million, we have to figure out how to fund that.

Mr. LIVINGSTON. Financial problems?

Mr. PYATT. Yes, sir. But the SWATH ship, I would like to bring out, is an American idea developed by the Navy, picked up by the Japanese, and exploited, and here we are trying to catch up with the Japanese.

Mr. MURTHA. Mr. Secretary, that is not just today. We do that all the time.

Mr. PYATT. Here is an idea and it turns out that in this particular class of ship with this particular mission it is an ideal design.

Mr. MURTHA. Why did it turn out this way?

Mr. PYATT. In the missions of these ships—I have got to watch myself here—the missions of these ships require them to operate in very adverse climatic conditions, and it is rough.

Mr. LIVINGSTON. Like the North Sea?

Mr. PYATT. Yes. And this class of ship, or the SWATH design, gives you good stability, far better stability than a monohull in that kind of sea condition, so it is just a good fit, and the people on them have to do some pretty detailed work, and so they need to have a little bit of stability so they can do it, and that is the reason.

Mr. LIVINGSTON. Thank you, Mr. Chairman.

LANDING CRAFT AIR CUSHION (LCAC)

Mr. MURTHA. Let's talk about LCAC. Apparently you or OSD has decided to delay the LCAC program for one year. There have been reports that problems continue to be encountered with both the engines and meeting operational requirements resulting in the Navy's decision to not accept any more LCACs. Could you shed some light on the reported problems and when you anticipate accepting deliveries?

Mr. PYATT. The LCAC is a problem in Louisiana like the T-AGOS is a problem in Washington.

Mr. DICKS. I am glad to hear there is balance.

Mr. PYATT. And Admiral Rowden can give you more details. The LCAC has not come along the way we hoped it would, and there is money available that has not been obligated. If we put it in the budget, we know what to do with it. Admiral Rowden can describe the problems.

Admiral ROWDEN. We had two test data regimens, Mr. Chairman. One was that of ship acceptance and one was that of operational testing. Ship acceptance is done by the Board of Inspection and Survey, Admiral Bulkley. Operational testing is done by Operational Test and Evaluation Force down in Norfolk, and these two merge somewhat. We had no difficulty in the acceptance of the first ship with Admiral Bulkley. There were some "starred items," which are the more significant trial items. All of these have been corrected or resolved.

On the second craft acceptance trial, there was difficulty in the lube oil and the hydraulic system, in the pump that ran it. It was an engineering problem that has been fixed. In addition to that, we had to run what was called Operational Test and Evaluation Test No. III, and it comes in a number, a series of things. These are tests wherein the craft is required to perform its mission under as close to combat conditions as we can get, put the load in it, have it travel the distance, at the speed, and all this sort of thing here.

We did not complete all of OT III. We still have some parts of that test left to complete.

In addition to that, about four months ago we ran a full technical evaluation on the craft, to determine from an engineering standpoint those things that needed to be worked on on the craft. The hydraulic system that I mentioned was one of them. The very large bearing that supports the bow thrusters, which are really air drivers that turn around and put a jet of air out was another. The angle drive of the engine was another, wherein the gear loading was very, very high, and we had bearing tolerance problems. Engines were another.

We have cleaned up, it's safe to say, all of the engineering issues on the craft, between my organization and the Bell organization. The only one hanging out at the present time is the engine. The engine manifested an erosion problem, when it was placed on the test stand at 680-some hours, when we tore it down, and also an issue called "coking in the bearings", meaning that the lube oil in the bearings, because of heat, would harden and form pieces of carbon in there, which could damage the bearings.

The company is working on that now. They do not have a total solution to that problem. We are ready to pick up the operational test either this month or next month, in June, and we fully expect to be able to complete that. I believe that the craft is coming along very well overall. I believe that we will be able then to complete the contracting of those craft which the Congress has authorized and appropriated. But we want to make sure that we are on a sound technical basis, before we proceed.

Mr. MURTHA. Do we know what the cost to correct the deficiencies will be at this point?

Mr. PYATT. The contractor is picking it up. We capped the target price and they are picking it up and we also brought competition in for production and it sure changed the environment. Very, very beneficial.

Mr. LIVINGSTON. Would the gentleman yield?

Mr. MURTHA. The gentleman from Louisiana.

Mr. LIVINGSTON. Mr. Secretary, I guess I just want to belabor it a bit. This company is not going out of business like Tacoma seems to be!

Mr. PYATT. I don't know.

Mr. LIVINGSTON. I know it is not, I will say that. There is no way you can compare the situation regarding the LCACs with that of the T-AGOS. The first LCAC was delivered on time and they have exceeded the requirements of both performance and reliability, despite the fact that it is all new technology; isn't that correct?

Mr. PYATT. I believe Admiral Rowden might state something differently.

Admiral ROWDEN. No, I am enthusiastic about the LCACs. I think the LCACs are doing very well. I think they have met requirements. Exceed is a little hard, I think, and in reliability, no. They are not where we want them in reliability yet, but we are going to get them there.

Mr. LIVINGSTON. But it is new technology?

Admiral ROWDEN. It is new technology.

Mr. LIVINGSTON. The vessels are being delivered? The first one was on time. The others are on the production line.

Admiral ROWDEN. One and two have both been delivered.

Mr. LIVINGSTON. It is not a question of running out of money without having vessels, is it? The contractor is meeting the terms of the new fixed-price competition.

Mr. PYATT. Just as long as they have deep pockets to cover that contract.

Mr. DICKS. Is it your assessment that they have underbid the contract?

Mr. PYATT. They are not finished yet. They started out on a cost-plus basis. We converted it to a fixed-price basis. They weren't very happy about that, and we are not finished. They are likely to hit ceiling. Most contractors don't bid to hit ceiling.

Mr. DICKS. When do you expect them to hit the ceiling?

Mr. PYATT. I don't know.

Mr. DICKS. How many ships are there under this contract?

Mr. PYATT. The first contracts? Twelve, I think. Two have been delivered.

Mr. DICKS. Four have been delivered? Is the Navy going to use the same policy it has been using in other areas?

Mr. PYATT. Absolutely.

Mr. DICKS. That is what I figured.

You are looking at a second source on LCACs, aren't you?

Mr. PYATT. We have a second source. We selected Lockheed a few months ago, and they are starting their first two ships.

Mr. DICKS. How did they look on this particular effort?

Mr. PYATT. They are looking fine.

Admiral ROWDEN. It is a little early to tell, Mr. Dicks. Construction has not yet started. The contractor is in the design phase. We feel they are all right.

Mr. PYATT. They are off to a good start and that is always a good sign.

MARINER FUND

Mr. DICKS. The conferees last year provided over $850 million for the Mariner Fund.

Mr. PYATT. The administration is proposing this program. I haven't thought about how to proceed with it.

Mr. DICKS. Have you discussed it with the chairman of the Senate Appropriations Committee?

Mr. PYATT. Many, many times.

Mr. DICKS. But it has to be authorized; isn't that correct?

Mr. PYATT. Yes.

Mr. DICKS. And it has not been yet?

Mr. PYATT. It has not been.

MINE COUNTERMEASURE (MCM) SHIPS

Mr. DICKS. So I guess we can wait until then. How are we doing on the mine countermeasure ships?

Mr. PYATT. Where do you want to start? Which one?

Mr. DICKS. How about one?

Mr. PYATT. That is a good place.

Mr. DICKS. Then two, then three.

Mr. PYATT. Then we have MSHs, too. Admiral.

Admiral ROWDEN. There are two different ships, Mr. Chairman. The MCM is being built out in Sturgeon Bay, Wisconsin. There are five ships under contract at the present time. None have been delivered. We are having difficulties with both of the vendors as far as production goes in that program. They are monohull ships, conventional ships.

There are also MSHs that are being built near New Orleans that are of a much more radical design, in that they are built out of glass reinforced plastic hull technology on a surface effect ship. They are not as mature in production. No ships are in production at the present time. There are serious technical difficulties in this ship, some of which have been demonstrated in what we have seen so far in the shock test of the hull section of the ship.

Mr. Dicks. When do you intend to award the fiscal year 1985 MCM ship contracts? As I understand it you have 11 ships funded, but you only have five, as you mentioned under the contract. What is your plan for awarding the fiscal 1985 contracts, or are you going to award them because of these problems that you have discussed?

Mr. Pyatt. I think it will be in the spring.

Mr. Dicks. What about the fiscal year 1986 ships?

Admiral Rowden. We plan on awarding the ships three, three, and three. The FY 86 ships will probably be awarded in late calendar year '86.

Mr. Dicks. Is there a possibility that you might not go ahead, because of these problems?

Mr. Pyatt. No. I think the problems are getting under control—I hope.

Mr. Dicks. What about the engines; are there still problems with the engines?

Mr. Pyatt. There have been a series of problems off and on with the engines, and its part of the overall ship problem.

Mr. Dicks. Is there an intent by the Navy to reopen the firm-fixed-price contract for MCM-4?

Mr. Pyatt. No. There are some changes the Navy is ordering, if that is what you mean by reopening. There will be changes.

Mr. Dicks. What impact will the engine problems have on the cost and delivery dates of MCM-3 through MCM-14?

Mr. Pyatt. I think that is all a matter of speculation on how bad we think the engine problems might be and what deliveries are. We have had a couple of test sequences on the engine. They haven't gone all the way through the thousand hours. The problems look solvable but you are never sure they are solved until they are solved.

Mr. Dicks. Our distinguished staff suggests that in the last engine test that it failed after 50 hours. Is that accurate?

Mr. Pyatt. No. That was on the first one. Then we restarted them again.

Mr. Dicks. Will an MCM ship be shock tested to the exact degree the MSH is being tested, and which ship will be shock tested?

Admiral Rowden. I will have to provide that, Mr. Chairman. I don't know. I know we intend to shock test them. I don't know which one.

[The information follows:]

The MCM 3 will be shock tested after delivery to the same degree that MSH will be shock tested after delivery.

Mr. Dicks. What was the percentage of physical completion of ships, MCM-2 and MCM-4 as of June 30, 1985, and January 30, 1986?

Mr. Pyatt. We will provide that for the record.

[The information follows:]

As of 30 June 1985, the MCM-2 was 19 percent complete and MCM-4 was 3 percent. As of 30 January 1986, MCM-2 was approximately 26 percent complete and MCM-4 was approximately 16 percent.

Mr. DICKS. Are you satisfied with the rate of progress? I get the impression you are not.

Mr. PYATT. They could be doing a lot better than they were.

Mr. DICKS. There are a few additional questions there for the record.

[CLERK'S NOTE.—Questions submitted by Mr. Dicks and the answers thereto follow:]

Question. Which MCMs are covered by the $97M which was provided last year for cost overruns?

Answer. The appropriated but not authorized $97M covered MCM-1 through MCM-5. Since these funds have not been authorized, they have not been provided.

Question. What is the Navy's current cost estimate for each ship?

Answer. The current program cost estimate for MCM-1 is $151.7M, MCM-2 is $135.5M, MCM-3 is $116.8M, MCM-4 is $99.6M and MCM-5 is $94.3M.

Question. Mr. Secretary, in light of all the problems associated with this program, have you had a chance to determine the cause of these problems, and what has been done to ensure this would not happen again?

Answer. Slow resolution of technical problems on both sides has greatly increased program cost and delay. There has been a great deal of learning during the ship design and construction process. There were problems with the lead yard's detail design agent and the quality and timeliness of their products. This has affected both the lead and follow ship construction. To help avoid some of these problems on other programs, we have increased the shipbuilder involvement during the design phase so that they are familiar with the designs before they bid them. This should improve the learning during detail design and construction.

Question. The Navy continues to experience problems with Electromagnetic Interference (EMI) in a number of the MCM's electronic systems, including the MCM ship bridge, the combat information center, and the Mine Neutralization System (MNS). What is the current status of the EMI problems? What is the projected cost of correcting the problems on a per ship basis?

Answer. The major EMI problems have been corrected by shielding of the bridge and CIC, hardening of the main machinery control sensors and similar actions. The MNV umbilical cable is susceptible to EMI and is being evaluated for solutions. However, this interference can be controlled by operational procedures. EMI hardening for the MNS is scheduled for future development. Several of the EMI related changes are being negotiated with the shipbuilders, therefore, an accurate cost can not be provided until these changes are finalized.

Question. What steps has the Navy taken to avoid similar problems on the MCM-6 through MCM-14?

Answer. The EMI corrections incorporated on MCMs 1 and 2 and the results of EMI testing will be implemented on MCM-3 through MCM-14.

[CLERK'S NOTE.—End of questions submitted by Mr. Dicks.]

Mr. DICKS. The gentleman from Oregon, Mr. AuCoin.

INTERPORT DIFFERENTIAL

Mr. AUCOIN. I wanted to ask a series of questions about the interport differential. What is your current position on the issue, and do you believe it is appropriate to consider this differential?

Mr. PYATT. In the past discussions we have had on the topic in the overhaul situation, we agreed it wasn't appropriate because it was kind of hard to really understand what it was and be fair about the whole thing. There are some costs that are quite clear and quite precise such as fuel costs and there are other costs that are more imprecise, such as what the costs of moving the crew around, if you went from one port to another. So there is a whole range of facts quite certain and facts quite uncertain. And as a practical matter, in the overhaul situation we have never had a decision changed by an interport differential calculation.

Mr. AUCOIN. Your position is to dispense with it, that is a factoring calculation.

Mr. PYATT. However, in SRA, where the magnitudes of the work are much less, the interport differential, even fuel costs would become the dominant number, and I think that would have to be considered there.

Mr. AUCOIN. Are there reasons in a major overhaul beyond the fact that it hasn't determined the outcome of a winning bid, that interport differentials should be dispensed with from the Navy standpoint?

Mr. PYATT. As I have described in other areas, I try to be a practical man, and if it hadn't had much of an influence and was also a little bit speculative I felt it was best for us to deal with the hard numbers in the bid at hand, and then take the risk that we would never unfairly prejudice an outcome because we hadn't in the past.

Mr. AUCOIN. What is the advantage to the Navy in full-scale overhauls of that policy?

Mr. PYATT. There is no advantage. In fact, another way of looking at it, by doing that the Navy subsidizes the mobilization base because we in fact eat the costs associated with movement out of homeport.

Mr. AUCOIN. Aren't there advantages in insuring the health of that mobilization base and also the competition and bidding?

Mr. PYATT. We made that decision in the overhaul area.

Mr. AUCOIN. Those are the two?

Mr. PYATT. This was a contribution towards that benefit in the area of an overhaul.

Mr. AUCOIN. Why wouldn't those same benefits be equally desirable in smaller work packages?

Mr. PYATT. First of all, I don't believe you start out with the academic situation of a likely impact. There the work packages are much smaller. The transit costs, even if you only counted fuel, the transit costs for the length of the coastline of the United States can be quite substantial, maybe as much as the SRA package, so you have got to look at the numbers.

Mr. AUCOIN. But depending on those numbers and depending on the jobs, isn't it possible that those same advantages—and we identified two in full-scale overhauls—would also be available to the Navy in case of the smaller?

Mr. Pyatt. It is possible but highly unlikely.

Mr. AuCoin. Why?

Mr. Pyatt. Because it can cost several hundred thousand dollars to take a ship along the length of the coast of the United States, and the work package maybe only several hundred thousand dollars.

Mr. AuCoin. But on the other hand some of those packages, the distance might not be as great, and the job might be larger?

Mr. Pyatt. That is why I would argue that you should include port differential in those shorter cases. That is just the way things fall out.

Mr. AuCoin. You mentioned that one of the major factors considered in interport differentials is fuel to steam from a homeport to a non-homeport repair facility. That is the case where it would be a regular overhaul or some smaller work package. Just thinking about regular overhauls for the moment, and the cost of fuel, can't a case be made that this is not in fact wasted fuel, because like any other steaming time, doesn't the ship crew receive training underway which improves readiness in the case of that steaming, to the point of where the repair is done?

Mr. Pyatt. I will let Admiral Metcalf answer that.

Admiral Metcalf. Usually when you are dealing with a ship that is going into an SRA—we are talking about short overhauls.

Mr. AuCoin. Let's talk about overhauls.

Admiral Metcalf. Okay. In a regular overhaul you usually spend about three weeks and have offloaded the ship, taken the ammunition off. You have started repair parts inventory. For all intents and purposes, you have a readiness system on the ship which is not ready to go fight. In fact, you generally start to do some of the ship's force work on the way up.

Mr. AuCoin. No, you misunderstand me, Admiral. The cost of fuel is one of the costs.

Admiral Metcalf. Yes.

Mr. AuCoin. That is figured into the interport differential.

Admiral Metcalf. Yes.

Mr. AuCoin. And in the case of overhauls, the Navy has made the decision that it is not important to have the interport differential. I wanted to ask a further question. Is it not possible to make the case with regard to that fuel cost that those costs and that fuel is not wasted at all, when you are steaming to that non-homeport repair yard, because like during any other steaming time, something is happening on that ship. The ship's crew receives training. I am sure they are not lounging on the deck or sunbathing.

Admiral Metcalf. No.

Mr. AuCoin. And in fact that contributes to readiness?

Admiral Metcalf. Well, it contributes to our ability to do the overhaul by doing the organizational work. They are getting ready to do the work that they plan to do in the shipyard, and so to that extent you can argue that there is some kind of an exchange, I suppose, it is kind of nebulous.

Mr. AuCoin. Gray?

Admiral Metcalf. Gray.

Mr. AuCoin. How about the return trip back to homeport after a situation like that; after you have done a repair job in a non-homeport repair yard, doesn't the trip back to the homeport serve as sort of a shakedown to determine whether the overall is a success?

Admiral Metcalf. Absolutely.

Mr. AuCoin. Doesn't a ship which is overhauled in homeport also have to perform some sort of a shakedown?

Admiral Metcalf. It has to go out and have the equipment tested.

Mr. AuCoin. If so, why is one contract charged for the shakedown and the other one not?

Admiral Metcalf. It is an arcane area. I am not particularly familiar with it.

Mr. AuCoin. Isn't this your field?

Admiral Metcalf. No, sir. I will pass that over.

Mr. AuCoin. Secretary Pyatt.

Admiral Metcalf. Do we figure that out? It is such a small number.

Mr. Pyatt. Why the trip back is counted on one and not on the other I really haven't given any thought. We will have to think about that.

Mr. AuCoin. You concede that there is an apparent contradiction?

Admiral Metcalf. I don't understand your line. I guess I have lost the line. It should be penalized if there are fuel costs?

Mr. AuCoin. No. What I am saying, Admiral, is that those who say that the interport differential—and you know very well that it is a topic—you did know that?

Admiral Metcalf. Oh, yes.

Mr. AuCoin. There are those who say that it is important for the Navy, and I am trying to bring us to the point that after repair jobs are done, there is a shakedown.

Admiral Metcalf. There is.

Mr. AuCoin. And the trip back to the homeport serves as a shakedown?

Admiral Metcalf. Yes, it does.

Mr. AuCoin. And without eliminating an interport differential you have the anomaly of shakedown costs being borne at the cost of non-homeport shipyards that perform the work, whereas if it is done in the homeport those yards are not assigned any increased costs on their bid. It would seem to me to be a good argument to put on the record, if you agree. If you don't agree, I would like to have you put that on the record, too.

[The information follows:]

Interport differential is the summation of predictable additional costs associated with taking the ship out of homeport for repairs. Interport differential is a evaluation factor used in the determination of a winning bid. The interport differential is added to the bid price to arrive at a bottom line for comparative purposes in determining the lowest overall cost to the government. The cost of fuel for the transit to and from the repair site is one element of the interport differential. Ultimately the contract is awarded at the bid price, the interport differential is not included in the contract price.

Prior to the completion of overhaul, ships are scheduled for sea trials. The ship's equipment is tested to insure the quality of repairs. Sea trials are an element of every overhaul contract whether accomplished in a ships homeport or out of homeport. Shakedown periods are scheduled subsequent to the completion of overhaul primarily for the training of the ships crew to ensure combat readiness of both personnel and

equipment. When ships are overhauled out of homeport, formal shakedown periods are scheduled after arrival in the ships homeport where support services would be available.

While interport differential is a relatively small percentage of the cost of an overhaul, it would be a greater percentage of the cost of the smaller work packages which make up Selected Restricted Availabilities. Therefore, exclusion of the interport differential could result in greater overall cost to the Navy.

Mr. AuCoin. The other major factor considered in interport differentials is fuel to steam from a home port to a non-homeport repair facility.

Mr. Pyatt. Only one way. The argument applies only one way.

Mr. AuCoin. Can not a case be made that this is not wasted fuel, because like any other steaming time, doesn't the ship's crew receive training under way which helps improve readiness?

Admiral Metcalf. They completed it on the way back.

Mr. AuCoin. Wasn't there a GAO report that——

Mr. Pyatt. GAO, they believed we should include the fuel costs in the costs of repair work, but as to the cost of moving the crew?

Mr. AuCoin. What year was that report?

Mr. Pyatt. Three years ago. I know of no GAO report that says we should not apply it. Only a Navy audit report which I commissioned argued that we should not, for the reasons I outlined to you.

Mr. Dicks. What were those reasons again?

Mr. Pyatt. In the Navy audit report, those reasons were that when they looked into the details of what went into the interport differential, some factors were quite clearly calculable, fuel costs primarily.

There were others that were more subjective, and they related to how much time the supervisor ships would have to spend in transit from his location, home base, to where the ship may be worked on, and that is a very subjective thing, particularly ahead of time.

Mr. Dicks. Thank you. Mr. AuCoin.

REPAIR OF U.S. SHIPS IN CANADA

Mr. AuCoin. With regard to work done in foreign yards, one of the concerns I have, and maybe it is shared by my friend, Mr. Dicks, is the fact it occurs with our neighbors to the immediate north, Canada.

In the Northwest, the Canadians are already seen as bad guys because of their increased domination of the soft wood lumber industry, and the U.S. overvalued dollar is a part of the problem there, as it is in some repair contracts.

Over the last few years, a number of repair contracts have been awarded to Canada, instead of U.S. yards.

One in particular has been bugging me, because the second lowest bidder, a Portland, Oregon yard, was only $40,000 over the Canadian bid, and in a job of the magnitude of this one, $40,000 is really peanuts, and I think we know that.

The jobs alone in the U.S. would have covered that difference. Given the fact that the overvalued dollar was coming into play here, I think that is something that the Navy ought to look at, and I would like to know exactly what our arrangement is with allowing the Canadian yards to bid on Navy repair, mostly MSC work.

How long has it been in effect? What would be the downside of the Navy taking the competition?

Mr. Pyatt. Since President Eisenhower signed an agreement with Canada during the fifties. During that time, there have been a few instances from time to time—and becoming more frequency lately.

Mr. AuCoin. Greater frequency?

Mr. Pyatt. Two or three ships this year, and none in the years before, so it has increased minimally.

Mr. AuCoin. How about the bids on the part of the U.S. on the Canadian ship repair work, has that been increased?

Mr. Pyatt. Canadians don't have any ships to work on.

Mr. AuCoin. Do they allow the U.S. to bid on Canadian ships?

Mr. Pyatt. I will provide it for the record, I am not sure.

Mr. AuCoin. Your testimony is, to the best of your knowledge, the Canadian Government does allow U.S. yards to bid on Canadian ships.

Mr. Pyatt. The Canadians don't bid on U.S. Navy ships. I will provide that for the record.

[The information follows:]

As a general rule, U.S. shipbuilders are not invited to bid on Canadian shipbuilding and repair contracts.

SQR-18 SYSTEM

Mr. Dicks. Mr. Chappell was interested in a question asked on the SQR-18. You have information for the committee. Would you provide that?

Admiral Metcalf. Yes. The question was, what was our future plan? Well, I have gotten from my staff what the plan was. That was an old plan, and right now, quite frankly, we are reviewing this whole issue of the SQR-18.

The review is going on because of the threat, and whether or not the 18 is an adequate number to meet that threat, and whether or not we should continue to install a system which does not meet the threat. We could get into a classified or closed session, which you don't want to do. In the 1987 budget, there are three SQR-18A(V)2 and three SQR-18(V)1 conversion kits systems for $28.7 million.

We are right now working the 1988 program, and we are having a major review within OPNAV on our future procurement plans.

Mr. Pyatt. I would like to say that the Secretary's position on equipment in the reserve fleet is to give it as good equipment as the active fleet, and every year we go through the budgeting process to do that.

IMPACT OF GRAMM-RUDMAN-HOLLINGS

Mr. Dicks. Thank you very much.

We are coming down to the budget and the authorization bill, the fiscal year 1987 appropriations bills, we are very hopeful Congress will fashion an alternative, I am going to be working for that.

Tell us a little bit about what impacts you see in the overhaul and repair, and all the areas that you have responsibility for, from Gramm-Rudman-Hollings and what prescriptions you have for dealing with it.

Mr. Pyatt. I wish the Congress would have been less precise about where the outlay cut was coming from.

Mr. Dicks. Both in O&M and new construction?

Mr. **Pyatt**. Everything I touch. We run into this over-prescription of what the answer is, and as I described, I believe you were not here, I described some crazy situations that we are in that kind of befuddle me.

In the new construction world, we are considering and may be forced to buy things before we need them to be installed on a new construction ship, because if we don't, we will be subjected to annual cuts, so we have the possibility of sending a ship to sea with no radar, and that is crazy.

Another one is in the escalation account in new construction where we are bound to pay, everything is done in base year dollars, and we are bound to pay an escalation.

That is carried in an unobligated balance, but we are obligated to pay it, but Gramm-Rudman makes its calculation on unobligated balances.

In the ship overhaul area, the magnitude of the O&M cuts may resolve in overhauls being delayed from this year to next year.

Mr. **Dicks**. We have worked hard to get caught up so we didn't have a backlog. We will go back to the old policies of delaying or pushing things into the next fiscal year.

Mr. **Pyatt**. Yes, sir, we are in balance now.

Mr. **Murtha**. Mr. Magliocchetti has a question.

Mr. **Magliocchetti**. With respect to the individual line item cuts versus a vertical cut, could you elaborate on the impact there?

Mr. **Pyatt**. In line item cuts, when you have to do a line item cut, it says you got to have so much percent out of each line item and, take a ship where you have one in the line item, you could conceptually be where you have many hundreds of millions of dollars in there, but you cannot award the ship, because you got to take so much percent off the top.

You know, we spent a lot of time trying to beat down ship budgets, and they are pretty tight, and there is not enough room for 8 percent off the top. If you want to do it by appropriation, that is my preference.

Mr. **Dicks**. Off the record here for a second.

[Discussion off the record.]

Mr. **Dicks**. Mr. Livingston?

Mr. **Livingston**. I have some questions to be answered for the record.

[Clerk's note.—Questions submitted by Mr. Livingston and the answers thereto follow:]

READY RESERVE FLEET DISPERSAL

Question. In March of 1985, the Navy had an RFP (Request for Proposal) on the street saying that at least five of 21 ships would go to the Gulf Coast. The Navy subsequently made a new announcement sending all 21 plus 17 more RRF ships (38) to just the East and West Coasts. In doing so, didn't the Navy ignore this subcommittee's direction in the FY-1985 bill to disperse some ships to the Gulf Coast?

The House in its FY-1986 report expressed its concern that the Navy omitted the Gulf Coast from its dispersal plans and recommended to the Navy to consider Gulf Coast ports.

When will the Navy include new Gulf Coast ports in its RRF Dispersal Plans?

Answer. Navy announced new Gulf Coast ports in its RRF Dispersal Plans on 27 March. They are: Four ships in Mobile, Alabama and three ships in New Orleans, Louisiana.

Question. In the FY-1986 Defense Bill, this subcommittee and the Defense conferees provided an additional $3.6 million to Navy O&M, accounts for the dispersal of seven additional RRF on top of the 38 the Navy originally planned.

Is the Navy proceeding with the disperal of all 45 ships?

Answer. Yes. The Navy is proceeding with the dispersal of 51 ships. Twenty-seven ships have been dispersed to date. It is expected that all 51 ships will be outported by the end of calendar year 1986.

Question. Is the Navy requesting any funding for RRF dispersal in FY-1987?

Answer. While no funding for new dispersals will be requested, the Navy will require an average $7.5 million to maintain the contracts of those ships already dispersed.

Question. Provide details for the record.

Answer. A five year cost plan for the 51 ships is provided: FY-86 $10.5M; FY-87 $7.3M; FY-88 $7.4M; FY-89 $7.5M; FY-90 $7.6M.

Question. If not, why not?

Answer. There are no current plans to disperse additional ships.

SHIP REPAIR AND MAINTENANCE POLICY

Question. The conferees included report language in last year's bill recommending that the Navy "implement increased competition in short term maintenance and repair contracts, where feasible, with a goal of competing twenty-five per cent on a coastwide basis." Does the Navy plan to meet this 25 per cent goal?

Answer. We currently have a detailed methodology for accomplishing ship maintenance effectively and reliably while lowering cost. Chief of Naval Operations instruction, OPNAVINST 4700.7G, provides our policies on ship maintenance. This instruction reflects the highly successful cost reduction policy we have implemented including use of fixed price contracts and coastwide bid of all availabilities longer than six months. We feel that we have achieved the optimum trade-off of coastwide competition versus personnel considerations (time in homeport). There is adequate and even keen competition for homeport maintenance for shorter availabilities. We feel there is no necessity to widen the consideration area to coastwide for these availabilities for competition's sake. In rare cases where competition may be lacking in the homeport we will certainly expand the consideration area. We therefore are not planning a 25 per cent goal although it may be achieved by the end of FY 86.

Question. How has the Navy implemented this directive? Provide details for the record.

Answer. Navy has reprogrammed funds to add four active and reserve ship overhauls. These ships are being solicited on a coastwide basis. Eight ship overhauls have been rescheduled from both the private and public sectors to be competed coastwide between both public and private shipyards. Navy has scheduled two nuclear submarine SRAs to the private sector. We have commenced competing all private sector Naval Reserve availabilities (regardless of duration) on a coastwide basis. These availabilities include overhauls, SRAs and PMAs. The exception to this policy will be those Naval Reserve ships which do not share a homeport with the active fleet.

Question. Does the Navy plan to compete 25 per cent of these contracts to non-homeport private shipyards? If not, why?

Answer. Navy has been making a concerted effort to reduce depot maintenance costs by increasing management efficiencies in public shipyards and through both public and private competition of depot maintenance availabilities. In 1984, in order to bolster our commercial shipyards due to shortages of maritime work, Navy directed all privately assigned overhauls of six months or more be competed coastwide vice one third being excluded for homeport area solicitation. In FY 86 Navy has sent aside eight overhauls to be competed on a coastwide basis between the public and private sectors. Two submarine Selected Restricted Availabilities (SRAs) have been assigned to the private sector. In the future we are going to compete at least a portion of the SSN SRAs between the public and private sectors. Coastwide private sector reserve ship availability solicitations have been directed regardless of duration. The exception to this policy will be those Naval Reserve ships which do not share a homeport with the active fleet. Navy feels we have achieved optimum trade-off of coastwide competition versus personnel considerations (time-in-homeport). There is adequate and keen competition for homeport maintenance for shorter availabilities. There is no necessity to widen the consideration area to coastwide for these availabilities for competition sake.

LANDING CRAFT AIR CUSHION

Question. How has the LCAC Performance and Reliability Testing been?

Answer. The LCAC has had a number of tests of its performance and reliability. These tests include acceptance testing of LCACs 001 and 002, Developmental Testing and Operational Testing. The LCAC 001 failed its final contract trial and will be retested this spring. LCAC 002 failed its first acceptance test, but passed its second. Developmental and Operational Testing stressed the crafts' ability to meet mission performance requirements operating from the welldeck of Amphibious ships.

Question. Has not the LCAC exceeded its requirements in these areas?

Answer. The LCAC has met or exceeded its performance requirements for speed, payload and seakeeping ability. The craft have not consistently met the reliability requirements.

Question. I understand that the Bell Aerospace facility may suffer some gaps in its production lines very soon. What is the status of the Navy's negotiation regarding the possible award of four additional ships from the FY85 buy to Bell?

Answer. The Navy has received a proposal from Bell Aerospace for four additional craft. Negotiations are ongoing.

Question. When will a decision on these ships be made?

Answer. A decision will be made when the questions about reliability improvements are resolved, expected this spring or summer.

Question. Would not a gap in the production line result in added costs?

Answer. A gap in the production line will add to the cost of craft procured from Bell. This will lessen any advantage Bell might have as the lead builder in this dual sourced program.

MSH TESTING

Question. Describe to the Committee the shock tests being conducted on the Glass Reinforced Plastic (GRP) hull section of the MSH.

Answer. Very little is known regarding the performance or responsiveness of a Surface Effect Ship (SES) from underwater explosions. Therefore, in offering the SES design for a mine warfare ship, the contractor offered to conduct a series of shock tests to a representative test section of the MSH prior to lead ship construction. The tests made at the contractor's cost would be used to validate the structural design and hull strength, accumulate needed data regarding the response of the SES under shock, and to verify the method of fabrication and quality control.

Four tests were planned, each progressively more severe. The first test was to be one-half the design shock level while the ship is on cushion. The second test was to be at full design shock level on cushion.

Question. What have been the results of these tests?

Answer. The results of the first test, at one-half design shock level, where satisfactory. The second test resulted in numerous unexpected structural failures, the results of the test were not acceptable. The third test, as well as lead ship construction, have been postponed. Since the second test on 31 analyzing core samples, conducting finite element analysis, and incorporating selected design and production changes on the undamaged side (opposite the side facing the first two detonations). Bell will conduct a repeat full severity on cushion test using the undamaged, modified side on 24 March 1986. It will take several weeks following this test to analyze data to defintively assess the results.

Subsequent to required tests, the contractor will present a plan for additonal design and testing required to validate the MSH design and thereafter proceed with lead ship construction.

Question. I understand the Navy normally conducts these types of shock tests on lead ships of a new class. However,these shock tests are normally 200 feet in distance from the ships and in the case of the MSH hull section we have conducted tests just 90 feet away. Is this accurate?

Answer. Lead ship of a class shock tests are conducted normally at one-half the design shock level of the hull. This would be equivalent to Bell's first test section shot at a distance of 200 feet. For the subsequent full severity shots of Bell's test section a 90 feet stand off was used with the same explosive charge size.

Question. The purpose of the MSH test section shock tests is to validate the structural design and hull strength. To accomplish this, a full design level shock test was called for. Thus, the distance from the hull was reduced to 90 feet for some of the tests. This is somewhat different from the purpose of a lead ship shock test which is to test the installed mission essential equipment and their mountings. Describe for the record the results of tests at 200 feet and 90 feet.

Answer. The results of the tests are addressed above.

RRF PURCHASES

Question. In January, the Navy purchased 13 ships for the Military Sealift Command Ready Reserve Fleet. List the conversion and eventual homeport sites for each of these vessels.

Answer. The conversion sites will be chosen by the owners of the ships. The homeport site for each of these ships follows: Barber Tiaf, Inactive Ship Facility, Philadelphia; Barber Priam, Inactive Ship Facility, Philadelphia; Barber Tonsberg, Inactive Ship Facility, Philadelphia; Doctor Lykes, Violet, Louisiana; Almeria Lykes, Violet, Louisiana; Tillie Lykes, Violet, Louisiana; Delta Norte, Mobile, Alabama; Delta Sud, Mobile, Alabama; Delta Mar, Mobile, Alabama; Delta Caribe, Mobile, Alabama; Charles Lykes, Portland, Oregon; Jupiter, Tacoma, Washington; Paralla, San Francisco, California.

MINE COUNTERMEASURE FORCE STUDY

Question. In last year's hearing the Navy mentioned a comprehensive study to review force level requirements into the year 2000. Results of this study would be made available to the committee by late 1985. Has this study been forwarded to Congress?

Answer. No.

Question. What are the results of this study with regard to mine countermeasure forces? Provide details for the record.

Answer. The Navy's mine countermeasures force level study is in its final phase or review. The approved document is not expected to be published until June 1968 at which time it will be forwarded to Congress.

VAPOR COMPRESSION DESALINATION PLANTS

Question. It is my understanding that Bath Iron Works, the contractor for the lead ship of the DDG 51 class, has accepted proposals from two manufacturers for the procurement of vapor compression desalination (VCD) plants for this ship.

However, only one of these manufacturers, Mechanical Equipment Company, Inc. (MECO) has Navy approval and qualification certification to provide VCD plants for the DDG 51 lead ship. This is a result of a competitive design, production, operation, and performance test program initiated by NAVSEA and won by MECO in 1981 and 1982.

Will the Navy allow the acceptance of a VCD plant that has not met Navy qualification certification, operational testing, and evaluation standards?

Answer. No, the prime contractor (Bath Iron Works) must deliver the DDG 51 to the Navy with a fully tested and qualified vapor compression desalination unit.

Question. How long will it take for another manufacturer to have similar equipment operationally tested, evaluated, and approved to meet Navy standards?

Answer. The Navy has awarded a contract to a potential second source.

Question. What impact will this have on the schedule of the DDG 51?

Answer. No impact is anticipated.

Question. When is a decision on awarding this contract going to be made?

Answer. The vapor compression distiller is contractor furnished equipment (CFE), and a decision by the prime contractor (Bath Iron Works) is imminent.

UNDERWATER HULL CLEANING

Question. What was the Navy's total expenditure for underwater hull cleaning for each of the last five fiscal years?

Answer.

Fiscal year:	*Total expenditure*
1981	$5,711,000
1982	8,748,000
1983	8,145,000
1984	9,009,000
1985	9,403,000

Question. What was the total number of vessels receiving underwater hull cleaning for each of the last five fiscal years?

Answer.

Fiscal year:	*Ships serviced*
1981	427
1982	631
1983	625
1984	523
1985	431

Question. What was the average cost per linear foot paid by the Navy for cleaning these hull bottoms for each of the last five fiscal years?

Answer.

Fiscal year:	*Price* [1]
1981	$17
1982	19
1983	19
1984	21
1985	21

[1] Average per linear foot price (fixed).

Question. What companies, or company, contracted with the Navy for each of the last five fiscal years for underwater hull cleaning work?

Answer. During the last five years the Naval Sea Systems Command has competitively awarded two contracts for these services to Seaward Marine Services, Incorporated.

Question. When do these present contracts, or contract, expire?

Answer. Contract N00024-79-D-4321, the first of these contracts, expired on 31 December 1983 and the follow-on contract, N00024-84-D-4014, was effective on 1 January 1984 and is presently scheduled to expire on 30 September 1986. These contracts are awarded for a period of one year with options for two additional years.

Question. Are these contracts competitively bid? If not, why not?

Answer. During the last five years the Naval Sea Systems Command has competitively awarded two contracts for these services. These contracts are awarded for a period of one year with options for two additional years.

Question. Is the Navy planning to compete these contracts in the future? If not, why?

Answer. The Naval Sea Systems Command is currently in the process of preparing a competitive solicitation for a follow-on contract for FY87 with options for FY88 and 89.

Question. If so, provide for the record how this competition will be conducted.

Answer. The Naval Sea Systems Command is currently in the process of reviewing the procurement history for all the previous underwater hull cleaning contracts to determine the best approach to enhancing the competition in accordance with the Competition in Contracting Act.

[CLERK'S NOTE.—End of questions submitted by Mr. Livingston.]

MULTIYEAR CONTRACTS

Mr. DICKS. What happens to things like multiyear contracts? As I understand it, in 1987, we don't have an exemption for existing contracts, nor on personnel.

Mr. PYATT. One of the problems we have to sort through is, you'll remember that last year we went through the multiyear contract on the LHD, that if we get into a multiyear contract, we must be able to finance it in the future.

And while our current programming has lots of room for it, I don't know whether funding will be there in the future.

COMPETITION IN SHIPBUILDING

Mr. DICKS. You have said you have gone up in competition substantially. In terms of the percentage of your work now done under competition, what were the numbers?

Mr. PYATT. In shipbuilding from 15 to 85 percent.

Mr. DICKS. Is that the reason why we have had some additional funds in the shipbuilding construction account, because we are doing a little better than anticipated when we appropriated the money?

Mr. PYATT. Yes. Competition brings along with it control of wages and material costs, because contractors have an incentive.

The inflation in shipbuilding has been well below the national average. In this particular industry, there is nobody in it except the Navy, so we are the only customer, but competition is a very valuable tool; and I say that recognizing Mr. AuCoin will soon raise some more questions.

Mr. DICKS. Mr. AuCoin?

SHIP REPAIR OVERSEAS

Mr. AUCOIN. Secretary Pyatt, I agree with your last statement.

Mr. Secretary, currently the Navy has a number of ships home ported overseas, with plans, we understand, to home port several more in the next couple of years.

Information provided to the committee by GAO indicates that the Navy spent an average of almost $80 million for ship repair work just for ships home ported in the Pacific area.

To your knowledge, is most of the work performed overseas for these home ported ships of an emergent nature, or standard overhaul or SRAs?

Mr. PYATT. Admiral Metcalf has been working on that problem.

Admiral **Metcalf**. Primarily, the overseas home porters get what they need, not only in modernization, but in emergent work as well, amounting to 2.5 percent of the overhaul, repair and overhaul budget.

Mr. **AuCoin**. Emergents?

Admiral **Metcalf**. Overseas home porter, but the emergent, that is all they get.

Mr. **AuCoin**. Of the $80 million that you spend in the Pacific area alone, what is category—well, what category had the most of that work?

Admiral **Metcalf**. Overseas home porter.

Mr. **AuCoin**. Within that, was most of that work of an emergent nature, standard overhaul?

Admiral **Metcalf**. I would have to take that for the record.

Mr. **AuCoin**. Can you make a rough guess? Not exact percentages.

Admiral **Metcalf**. It would be a normal ratio.

Mr. **AuCoin**. If you want to supply it for the record.

[The information follows:]

In FY-85, the overseas homeporters depot maintenance was 26.4% of an emergent nature and 73.6% of scheduled maintenance. The 73.6% is composed of 33.0% for overhauls, 33.0% for selected restricted availabilities and 7.6% for phased maintenance availabilities.

Mr. **AuCoin**. Today in the hearing, it came out in testimony that the need for crew training and home port training facilities is one of the reasons the Navy has for reserving the ship repair work for home ports.

The committee understands that in looking at ship repair work overseas, that such training is very limited in overseas home ports.

If that is true, how do you compensate for the training shortfall?

Admiral **Metcalf**. Take the acoustic array ship, and I know the most about that, because I was Commanding Officer of an acoustic ship.

What you do there, you require people reporting those ships to take training on the way. You do such things as fire fighting training in places where you can do it.

Mr. **AuCoin**. Training on the way, en route?

Admiral **Metcalf**. No, in other words, an officer will have to go through considerable schooling in the United States before he gets there. Crew members will have to be trained.

We have obligated service, so they have to have a certain amount of service, normal turnover, and it is a difficult management problem on the part of the ship to make up for that sort of thing, and we go to special efforts to do that.

That is one of the things—the Captains get more time.

Mr. **AuCoin**. That is a difficult thing to deal with. For non-emergent repair work, has the Navy given any consideration to bringing those ships back to the States for repair work?

Mr. **Pyatt**. I am sorry?

Mr. **Dicks**. Could you repeat it?

Admiral **Metcalf**. I can take it. We have studied this——

Mr. **Dicks**. If the gentleman from Oregon has no objection, can I let Mr. Pyatt go, and the Admiral can stay, and we can finish this?

Mr. **Pyatt**. Thank you.

Admiral **Metcalf**. What you are dealing with is time off the line. The ship having to cross the Pacific back and forth, and the attendant disruption.

Mr. **AuCoin**. Has the Navy considered it?

Admiral **Metcalf**. Yes, we have considered it and rejected it for cost and production readiness.

Mr. **AuCoin**. Has it considered the benefits in jobs, U.S. balance of payments and from that standpoint, wouldn't that make a certain amount of sense?

Admiral **Metcalf**. I suspect that we have, and I was not involved in that part of the study, just the operational part of the thing.

Mr. **AuCoin**. For the record, provide the cost, if you would, for all ship repair work by ship performed outside the 50 States for fiscal year 1985, broken down by normal overhauls, SRAs, and emergent work and whether the ship was home ported overseas.

Admiral **Metcalf**. Thank you, Mr. Chairman.

[The information follows:]

FY 85 Ship Maintenance; Outside 50 States by Hull

FY 1985 Overhauls ($K):	
USS *Lockwood* (FF 1064)	[1]17,000
USS *Francis Hammond* (FF 1067)	[1]11,000
USS *Proteus* (AS 19)	[1]20,000
FY 1985 SRA's ($K):	
USS *Sterett* (CG 31)	[1]5,000
USS *Midway* (CV 41)	[1]33,000
USS *Knox* (FF 1052)	[1]1,000
USS *Blue Ridge* (LCC 19)	[1]9,000
FY 1985 PMA's ($K):	
USS *Niagara Falls* (AFS 3)	[1]6,000
USS *San Jose* (AFS 7)	[1]5,000
FY 1985 Emergent ($K)—Pacific Fleet:	
USS *Conserver* (ARS 39)	432
USS *Prairie* (AD 15)	2
USS *Samuel Gompers* (AD 37)	49
USS *Acadia* (AD 42)	199
USS *Pyro* (AE 24)	38
USS *Mount Hood* (AE 29)	624
USS *Flint* (AE 32)	122
USS *Shasta* (AE 33)	41
USS *Kiska* (AE 35)	432
USS *Mars* (AFS 1)	77
USS *Niagara Falls* (AFS 3)	[1]4,272
USS *White Plains* (AFS 4)	[1]6,633
USS *San Jose* (AFS 7)	[1]5,312
USS *Willamette* (AO 180)	519
USS *Sacramento* (AOE 1)	41
USS *Camden* (AOE 2)	168
USS *Wichita* (AOR 1)	139
USS *Kansas City* (AOR 3)	240
USS *Roanoke* (AOR 7)	179
USS *Ajax* (AR 6)	280
USS *Jason* (AR 8)	323
USS *Reclaimer* (ARS 42)	64
USS *Proteus* (AS 19)	[1]581
USS *Beaufort* (ATS 2)	1,181
USS *Brunswick* (ATS 3)	584
USS *Leahy* (CG 16)	151
USS *Worden* (CG 18)	100
USS *Gridley* (CG 21)	169
USS *England* (CG 22)	66
USS *Reeves* (CG 24)	[1]2,144
USS *Jouett* (CG 29)	97

USS *Horne* (CG 30)	122
USS *Sterett* (CG 31)	[1] 3,136
USS *William H. Standley* (CG 32)	34
USS *Fox* (CG 33)	2
USS *California* (CGN 36)	138
USS *Texas* (CGN 39)	245
USS *Arkansas* (CGN 41)	38
USS *Midway* (CV 41)	[1] 325
USS *Independence* (CV 62)	9
USS *Kitty Hawk* (CV 63)	434
USS *Constellation* (CV 64)	380
USS *Enterprise* (CVN 65)	446
USS *Carl Vinson* (CVN 70)	640
USS *Paul F. Foster* (DD 964)	71
USS *Kinkaid* (DD 965)	88
USS *Hewitt* (DD 966)	158
USS *Elliot* (DD 967)	401
USS *Oldendorf* (DD 972)	[1] 2,007
USS *John Young* (DD 973)	713
USS *Leftwich* (DD 984)	40
USS *Harry W. Hill* (DD 986)	3
USS *Ingersoll* (DD 990)	203
USS *Fife* (DD 991)	34
USS *Fletcher* (DD 992)	326
USS *Henry B. Wilson* (DDG 7)	5
USS *McCormick* (DDG 8)	267
USS *Towers* (DDG 9)	[1] 948
USS *Robison* (DDG 12)	291
USS *Hoel* (DDG 13)	86
USS *Buchanan* (DDG 14)	1,488
USS *Joseph Strauss* (DDG 16)	75
USS *Cochrane* (DDG 21)	[1] 2,774
USS *Waddell* (DDG 24)	2
USS *Callaghan* (DDG 994)	94
USS *Brooke* (FFG 1)	122
USS *Knox* (FF 1052)	[1] 2,408
USS *Roark* (FF 1053)	138
USS *Hepburn* (FF 1055)	1,103
USS *Lockwood* (FF 1064)	[1] 518
USS *Stein* (FF 1065)	1
USS *Francis Hammond* (FF 1067)	[1] 680
USS *Downes* (FF 1070)	198
USS *Badger* (FF 1071)	112
USS *Robert E. Peary* (FF 1073)	53
USS *Fanning* (FF 1076)	27
USS *Ouellet* (FF 1077)	20
USS *Cook* (FF 1083)	59
USS *Brewton* (FF 1086)	25
USS *Kirk* (FF 1087)	[1] 913
USS *George Philip* (FFG 12)	598
USS *Sides* (FFG 14)	722
USS *John A. Moore* (FFG 19)	933
USS *Mahlon S. Tisdale* (FFG 27)	114
USS *Reid* (FFG 30)	41
USS *Jarrett* (FFG 33)	55
USS *Crommelin* (FFG 37)	29
USS *Blue Ridge* (LCC 19)	[1] 393
USS *Okinawa* (LPH 3)	217
USS *Monticello* (LSD 35)	834
USS *Tarawa* (LHA 1)	2,639
USS *Belleau Wood* (LHA 3)	7
USS *Peleliu* (LHA 5)	1,179
USS *Durham* (LKA 114)	80
USS *Mobile* (LKA 115)	303
USS *St. Louis* (LKA 116)	[1] 4,183
USS *Ogden* (LPD 5)	559
USS *Duluth* (LPD 6)	899

USS *Cleveland* (LPD 7)	79
USS *Dubuque* (LPD 8)	[1] 252
USS *Denver* (LPD 9)	450
USS *Juneau* (LPD 10)	714
USS *New Orleans* (LPH 11)	655
USS *Alamo* (LSD 33)	219
USS *Anchorage* (LSD 36)	1,347
USS *Mount Vernon* (LSD 39)	488
USS *Fort Fisher* (LSD 40)	49
USS *Fresno* (LST 1182)	925
USS *Frederick* (LST 1184)	28
USS *Schenectady* (LST 1185)	182
USS *Cayuga* (LST 1186)	846
USS *Tuscaloosa* (LST 1187)	604
USS *Darter* (SS 576)	[1] 975
USS *Barbel* (SS 580)	[1] 1,003
USS *Jacksonville* (SSN 699)	13
USS *Skate* (SSN 578)	273
USS *Swordfish* (SSN 579)	374
USS *Sargo* (SSN 583)	19
USS *Barb* (SSN 596)	328
USS *Pollack* (SSN 603)	1,417
USS *Haddo* (SSN 604)	333
USS *Pogy* (SSN 647)	58
USS *Aspro* (SSN 648)	12
USS *Puffer* (SSN 652)	357
USS *Hawkbill* (SSN 666)	316
USS *Pintado* (SSN 672)	113
USS *Drum* (SSN 677)	20
USS *William H. Bates* (SSN 680)	251
USS *Tunney* (SSN 682)	70
USS *Birmingham* (SSN 695)	66
USS *New York City* (SSN 696)	210
USS *Indianapolis* (SSN 697)	28
USS *Lajolla* (SSN 701)	211
USS *Portsmouth* (SSN 707)	51
USS *San Francisco* (SSN 711)	62
USS *Buffalo* (SSN 715)	185
FY 1985 Emergent ($K)—Atlantic Fleet:	
USS *Saratoga* (CV 60)	1
USS *Independence* (CV 62)	15
USS *America* (CV 66)	1
USS *Nimitz* (CVN 68)	15
USS *Dwight D. Eisenhower*	18
USS *Puget Sound* (AD 38)	[1] 824
USS *Yellowstone* (AD 41)	17
USS *Nitro* (AE 23)	622
USS *Butte* (AE 27)	601
USS *Sylvania* (AFS 2)	136
USS *Concord* (AFS 5)	186
USS *San Diego* (AFS 6)	1
USS *Lasalle* (AGF 3)	1,432
USS *Seattle* (AOE 3)	12
USS *Savannah* (AOR 4)	357
USS *Kalamazoo* (AOR 6)	458
USS *Hoist* (ARS 40)	86
USS *Opportune* (ARS 41)	116
USS *Recovery* (ARS 43)	13
USS *Wainwright* (CG 28)	25
USS *South Carolina* (CGN 37)	2
USS *Mississippi* (CGN 40)	4
USS *Spruance* (DD 963)	42
USS *Arthur W. Radford* (DD 968)	258
USS *Caron* (DD 970)	18
USS *Comte de Grasse* (DD 974)	77
USS *Stump* (DD 978)	42
USS *John Hancock (DD 981)*	81

USS *Charles F. Adams*	99
USS *Claude V. Ricketts* (DDG 5)	56
USS *Barney* (DDG 6)	150
USS *Sampson* (DDG 10)	60
USS *Richard E. Byrd* (DDG 23)	90
USS *King (DDG 41)*	57
USS *Dewey* (DDG 45)	127
USS *Kidd* (DDG 993)	9
USS *Garcia* (FF 1040)	8
USS *Edward McDonnell* (FF 1043)	377
USS *Brumby* (FF 1044)	6
USS *Voge* (FF 1047)	1
USS *Koelsch* (FF 1049)	193
USS *Trippe* (FF 1075)	1
USS *Joseph Hewes* (FF 1078)	29
USS *Bowen* (FF 1079)	51
USS *McCandless* (FF 1084)	40
USS *Moinester* (FF 1097)	69
USS *Julius A. Furer* (FFG 6)	23
USS *McInerney* (FFG 8)	163
USS *Samuel E. Morison* (FFG 13)	40
USS *Estocin* (FFG 15)	52
USS *Flatley* (FFG 21)	21
USS *Stark* (FFG 31)	1
USS *John T. Hall* (FFG 32)	9
USS *Underwood* (FFG 36)	31
USS *Doyle* (FFG 39)	18
USS *Klakring* (FFG 42)	92
USS *Saipan* (LHA 2)	360
USS *Austin* (LPD 4)	42
USS *Shreveport* (LPD 12)	255
USS *Nashville* (LPD 13)	254
USS *Iwo Jima* (LPH 2)	74
USS *Inchon* (LPH 12)	256
USS *Hermitage* (LSD 34)	93
USS *Pensacola* (LSD 38)	51
USS *Newport* (LST 1179)	47
USS *Sumter* (LST 1181)	94
USS *Saginaw* (LST 1188)	72
USS *Spartanburg County*	344
USS *La Moure County* (LST 1194)	101
USS *Barnstable County* (LST 1197)	494

[1] Overseas homeported ship.

Mr. AuCoin. I have some questions I would like you to answer for the record.

[Clerk's note.—Questions submitted by Mr. AuCoin and the answers thereto follow:]

MSH—MINESWEEPER

Question. Admiral Metcalf, you have requested $196 million for four MSH ships this year; five have been funded in prior years. When do you expect to deploy the first of these new vessels?

Answer. The MSH-1 is planned to be available for operational use in March 1989. Difficulties in resolving design problems could cause delay in delivery.

Question. Which homeports will receive the first ships? Please provide the expected date of arrival for these ships in their homeports.

Answer. Although the final determination of homeports has not yet received SECNAV approval, Charleston, SC will be proposed as homeport for MSH-1. The intent is to have the first ship of the class collocated with the squadron commander and with the Mine

Warfare Command. The MSH-1 is expected to arrive in Charleston in March, 1988.

Question. How many do you ultimately want to deploy?

Answer. Seventeen.

"LOWBALLING" ON NAVAL SHIP OVERHAULS

Question. Secretary Pyatt, several weeks ago at an Armed Services Committee hearing you indicated that a Navy study had been done analyzing cost overruns and the problem of "low-balling". You also indicated that it showed less of problem than a GAO report released in January, 1986, entitled: "Navy Maintenance, Costs to Overhaul Navy Ships at Private Shipyards". Can you please provide the Navy study for the record

Answer. Report is attached.

ANALYSIS OF
"LOW BALLING" ON NAVAL SHIP
OVERHAULS CONDUCTED IN THE PRIVATE SECTOR

CONDUCTED BY

COMMANDER, NAVAL SEA SYSTEMS COMMAND

SEPTEMBER 1985

Analysis of 'Low Balling' on bids for Naval Ship Overhauls Conducted in the Private Sector

The Navy was requested to provide an analysis of the extent to which 'Low Balling' is taking place in the private sector ship repair business and the adverse impact, if any, which results. The study, segmented into five sections, evaluates cost performance for fixed price and cost type overhaul contracts during 1981-1985. The data analysis separates overhauls by contract type and region for the purpose of analysis.

I. DEFINITIONS

The terms 'low balling' and 'buying in' are synonymous. Both refer to the practice of submitting a bid which is unrealistically low for the scope and magnitude of work described in the specifications in order to win the contract. The contractor may understate the projected production labor rate or labor hours, or discount the projected overhead rate on the initial bid to minimize the projected cost of the work package. We have used the government estimate as a baseline because it reflects a consistent attempt to estimate the cost of work based on returned costs. It does not consider the business environment impacts nor does it consider the relative efficiency of different yards.

Commonly, in order to 'get well', the contractor attempts to over-bid growth work or argue that work was not well defined in the original bid package. This additional work is negotiated on a sole source basis between the contractor and the government, after the contractor has submitted his estimate and it has been reviewed and compared to the government's estimate. In this situation the competitive environment has been removed from the procurement. There are several additional avenues available to a contractor to increase his monetary return after contract award:

- Overpricing of changes
- Short cuts in quality
- Undermanning
- Excessive submission of Inspection Discrepancy Reports. (looking for additional work)
- Narrow interpretation of specifications (looking for additional contract coverage in the way of changes)
- Total cost claim after the ship has been redelivered.

Each of the elements listed could increase costs to the government. For example, items submitted as additional work must be evaluated to determine if they are necessary. Meetings to define or clarify specifications take additional time. Improper interpretation could result in rip-out and rework of major systems leading to increased cost. Delay and disruption are very difficult to estimate and this gives the contractor an opportunity to overprice his effort. Short cuts in quality offer initial savings of fewer manhours expended. Out-of-sequence work is often accomplished as premium time (overtime).

Federal Acquisition Regulation (FAR) 3.501-1 defines 'buying in' as submission of an offer below anticipated cost with the expectation of 'getting well' later. For the purposes of a reference point for this study, a 'buy in' is defined as a contract awarded for 70% or less of the government estimate for the work bid package.

Cost increases in overhaul work are manifest in two principal areas, growth work and new work. Growth work is closely or directly associated with work specified in the existing job order and is frequently an extension of a specific work item. It can result from several causes such as additional information gained when equipment is opened, or deficient specifications. Growth work may or may not have been included in the original government estimate. New work is not related to the original job order specifications and not included in the original government estimate or contractor bid. Growth and new work are not necessarily objectionable. While considerable effort, including tests and inspections prior to overhaul, has been put forth to properly define overhaul work, some growth is inevitable. Inspections, once equipment and systems are open, identify work which must be accomplished to ensure continued equipment operability. The most efficient time to affect repairs is when the equipment is opened. It is important to control the amount of growth to that which is essential and cost effective, and to ensure a fair and reasonable price. Growth in the neighborhood of 20% of the government estimate is considered reasonable. We established for the Supervisors of Shipbuilding a growth goal of 10% to assist in management control. It is a goal, to be arrived at through better specifications and prudent management. Required repairs must be accomplished during the overhaul or the cost effect is likely to be greater than the instant cost of repairs.

The Navy draws on several resources as tools to assist in determining the validity of contractors' bids/proposals. For cost type contracts, the Defense Contract Audit Agency (DCAA) performs a rate verification and the proposal is assessed for cost realism. For a firm fixed price contract, a pre-award survey of the low bidder may be conducted to ensure that the contractor's technical, managerial, financial and physical capabilities to conduct the overhaul are sound. The Navy Contracting Officer utilizes the DCAA report and the pre-award survey information to determine the contractors' responsibility. If a contractor attempts to 'buy in' and the DCAA audit or pre-award survey information indicates he is able to financially sustain the loss, the contracting officer must proceed to award, all other factors being equal. If the contractor is unable to financially sustain the loss, the contracting officer may make a determination of non-responsibility. When a large contractor (1000 employees or more) is determined to be non-responsible, he has no immediate recourse and the contract is awarded to the next highest responsible bidder. A small business contractor (less than 1000 employees) may appeal a non-responsibility determination to the Small Business Administration (SBA). The SBA can overturn the Navy's determination and issue a Certificate of Competency (COC) assuring award. The Navy, by law, must then award to the certified small business.

II. CAUSES OF 'LOW BALLING'

Several factors influence a contractor's bidding strategy and can lead toward 'low ball' bids. The primary motivating factor is competition within the industry. As a result of the declining United States commercial ship repair and construction industry, shipyards are looking to Navy repair work as the only alternative. There is a limited number of Navy overhauls, encouraging ship repair contractors to increase their efforts to obtain Navy work. The combined impacts of these forces have led to a very intense market.

III. STUDY BACKGROUND AND METHODOLOGY

The results of overhaul contracting data on overhauls completed in fiscal years 1982, 1983, 1984, and 1985 were examined. Data included the government estimate at bid opening, the award price, the dollar values of growth and new work, and the projected or final contractor cost. The data base consisted of 105 active and reserve ship overhauls. Of the 105 overhauls, 75 were firm fixed price overhauls and 30 were cost type. Cost type overhaul contracts will be compared with firm fixed price contracts in the analysis.

In addition to the basic comparison of cost data, the adequacy of the specifications and the overall quality of the repair effort was assessed. Further, on selected overhauls, we examined the bidder's lists to assess the extent of competition for a given availability.

Comparisons were made between the award price and the original government estimate, and between the final price, less new work, and the original government estimate. These comparisions were then viewed in context with the timeliness of completion and quality of the overhaul.

Data ranges were established to assess the percentage at which a ship was awarded above or below the government estimate and the relation to final cost. The comparisons were segmented by port area and by coast. The resulting trends and analyses are presented in the following section.

IV. ANALYSIS AND IMPACTS

FIXED PRICE CONTRACTS

Seventy-five fixed price contracts were reviewed for this study. Figure 1 shows the number of fixed price contract awards against the percent of the government estimate. Using the 70% benchmark, forty-two of these could be classified as 'buy ins'. No distinct correlation exists between an apparent 'buy in' and the timely redelivery of the ship, except in the cases where the award was made for 50% or less of the government estimate. In this case five of the six ships were delivered late.

In examining the effects of 'buy ins' the germane question is "What did the work finally cost?" In order to answer we defined a figure of merit as:

$$\frac{\text{(final cost) - (new work)}}{\text{(government estimate)}}$$

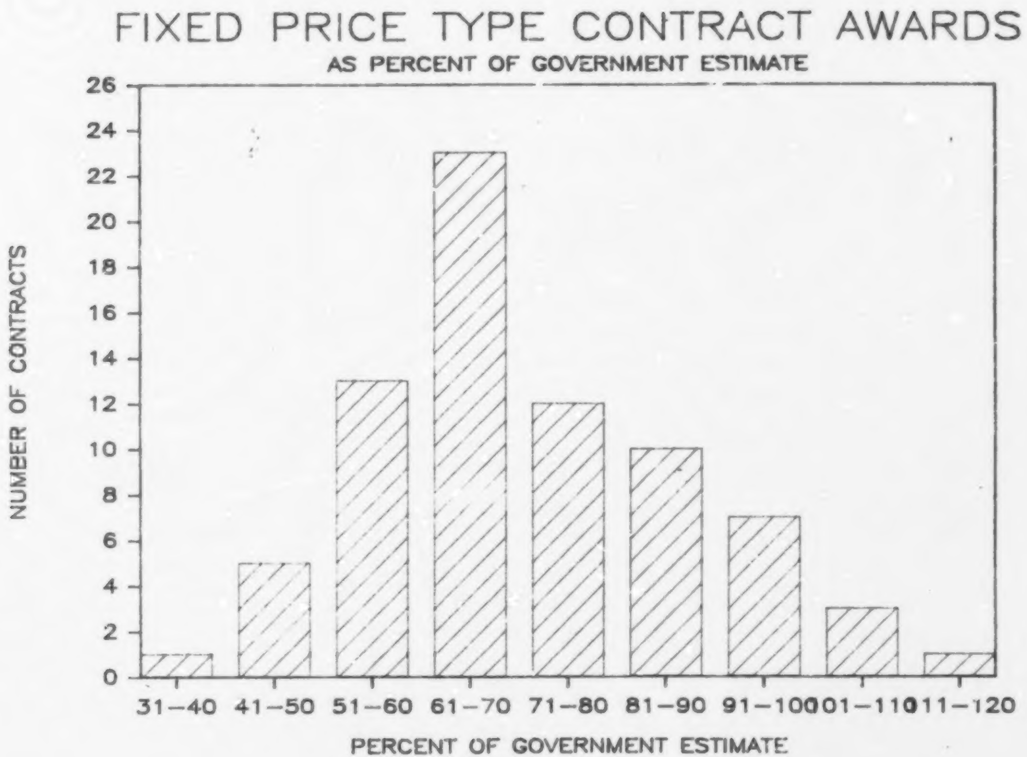

FIXED PRICE TYPE CONTRACT AWARDS
AS PERCENT OF GOVERNMENT ESTIMATE
NUMBER OF CONTRACTS
0
2
4
6
8
10
12
14
16
18
20
22
24
26
31–40
41–50
51–60
61–70
71–80
81–90
91–100
101–110
111–120
PERCENT OF GOVERNMENT ESTIMATE

Figure 1

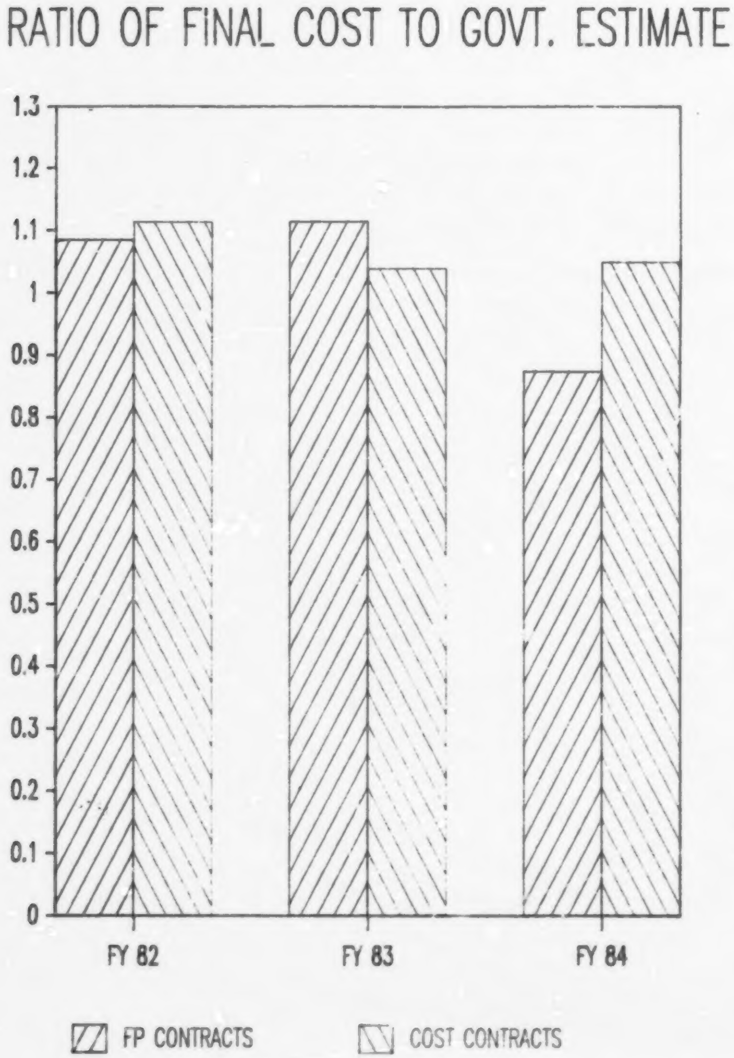

RATIO OF FINAL COST TO GOVT. ESTIMATE
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
FY 82
FY 83
FY 84
FP CONTRACTS
COST CONTRACTS

Figure 2

By excluding new work, or work beyond the scope of the original specifications, we can compare the final cost to the original estimate for approximately the same work. Figure 2 shows this for both fixed price and cost type contracts. With the exception of fiscal year 1983, fixed price contracts produced lower final costs than cost type contracts, even with 'buy ins' and subsequent growth. The anomaly in fiscal 1983 can be traced to specific SUPSHIPs and overhauls.

Reviewing the data from a regional perspective provides a clearer picture of the effect of the diminishing commerical market. In San Diego, there are seven active Master Ship Repair Contractors competing for about six scheduled Navy overhauls a year. Of the last twelve firm fixed price overhauls in San Diego, eleven were awarded for 70% (or less) of the government estimate. The intensity of competition becomes more vivid when one considers the overhaul of USS DUBUQUE (LPD 8) in FY 82 awarded at 43% of the government estimate. All five bids submitted were below the government estimate with the highest bid 58% of the government estimate. The majority of the scheduled Navy work in San Diego is awarded in this type of competitive climate. Low-balling appears prevalent in this region. In other West Coast regions (Long Beach, San Francisco and Seattle), where regional competition is not as fierce, the contractors tend to bid closer to the government estimate.

There are four major ship repair areas, San Diego, Norfolk, Boston and Brooklyn, where the appearance of 'buy ins' is prevalent as shown in Table (1).

TABLE (1)

LOW BALL BIDS BY REGION

SUPSHIP	# OF OVERHAULS	QUALITY
San Diego	11	Unsatisfactory
Norfolk	8	Satisfactory
Boston	7	Satisfactory
Brooklyn	4	Satisfactory

Quality of the completed overhauls showed a definite relationship to the appearance of a 'buy in' only in San Diego. Eight of the eleven 'low bid' ships experienced significant contractor responsible discrepancies. No other area reported any significant impact on quality resulting from apparent 'low balling'. Figures 3 and 4 show the figure of merit for each SUPSHIP area. When viewed by region, the effectiveness of fixed price contracts is clearer.

The impact of the apparent 'buying in' is briefly compared by region below.

San Diego - Sixty four percent of the 'buy in' availabilities completed late with an impact on quality.

Norfolk - Minimal impact on time, cost or quality.

Boston - Minimal impact on time, cost or quality.

Brooklyn - Fifty percent of the 'buy in' availabilities completed late.

COST TYPE CONTRACTS

Cost type contracts have shown similiar results to fixed price contracts. Figure 5 shows the number in each range of

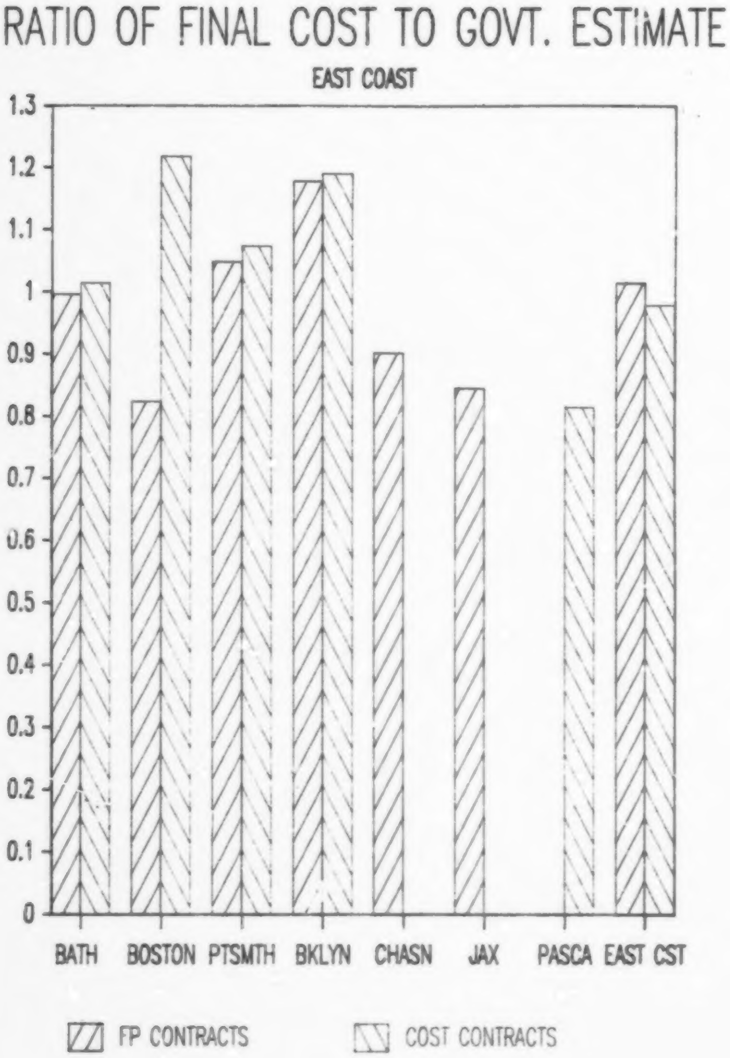

RATIO OF FINAL COST TO GOVT. ESTIMATE
EAST COAST
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
BATH
BOSTON
PTSMTH
BKLYN
CHASN
JAX
PASCA
EAST CST
FP CONTRACTS
COST CONTRACTS

Figure 3

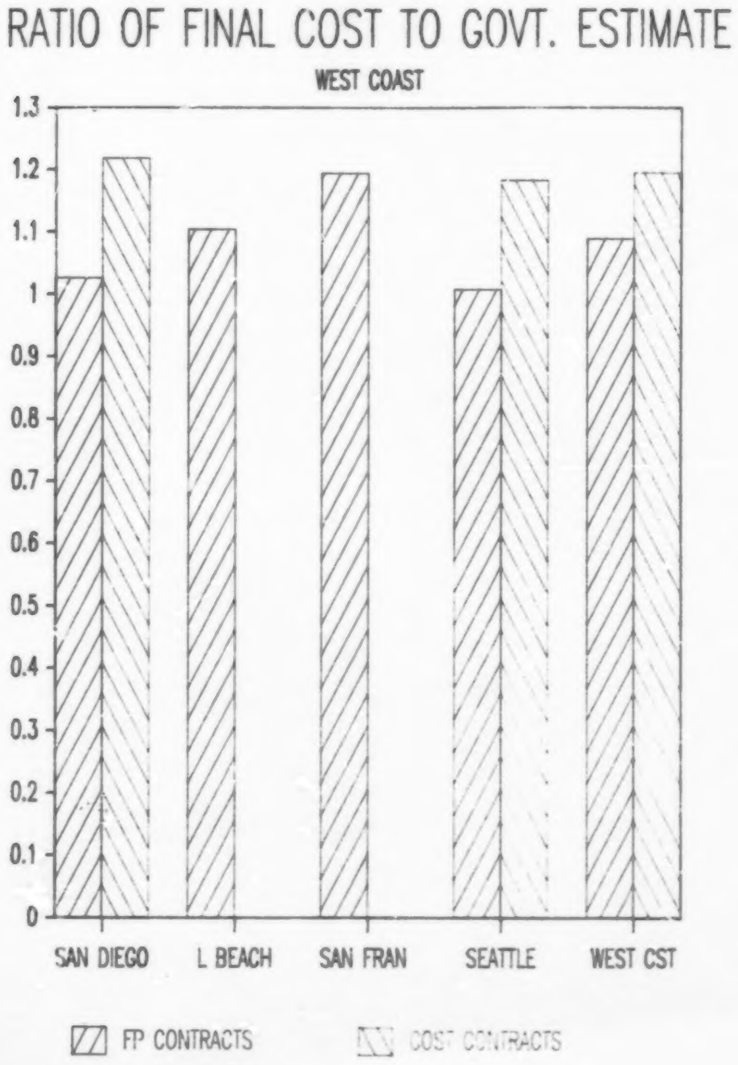
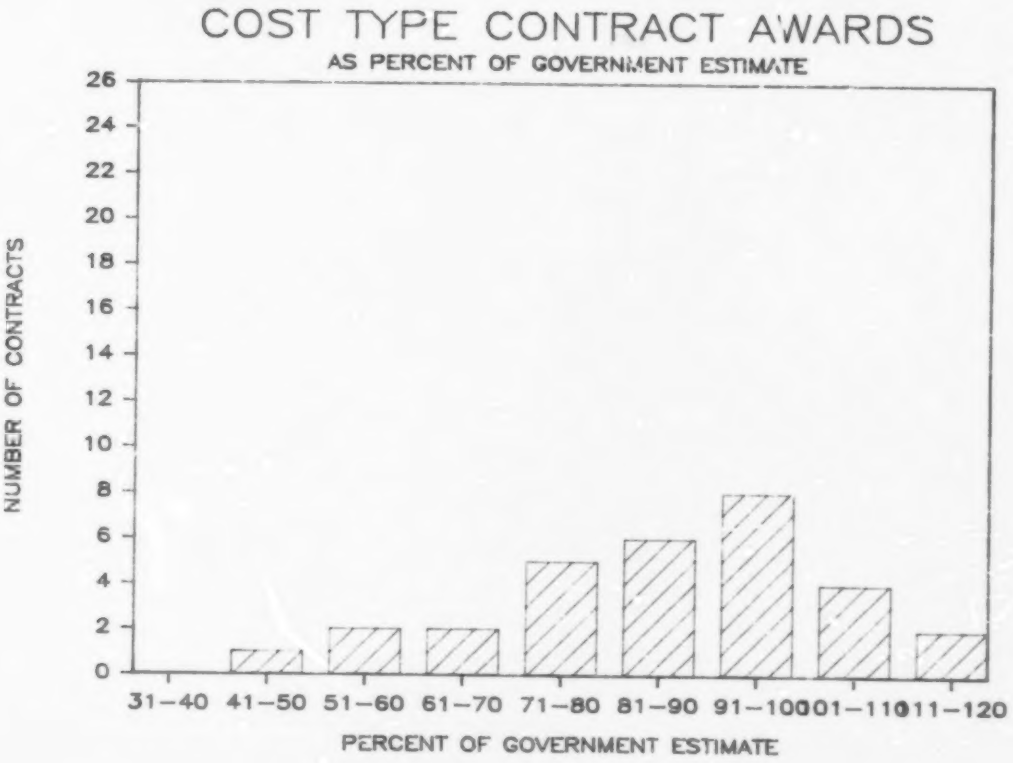

RATIO OF FINAL COST TO GOVT. ESTIMATE
WEST COAST
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
SAN DIEGO
L BEACH
SAN FRAN
SEATTLE
WEST CST
FP CONTRACTS
COST CONTRACTS

Figure 4

Figure 5


COST TYPE CONTRACT AWARDS
AS PERCENT OF GOVERNMENT ESTIMATE
NUMBER OF CONTRACTS
0
2
4
6
8
10
12
14
16
18
20
22
24
26
31–40
41–50
51–60
61–70
71–80
81–90
91–10001–11011–120
PERCENT OF GOVERNMENT ESTIMATE

percentages.

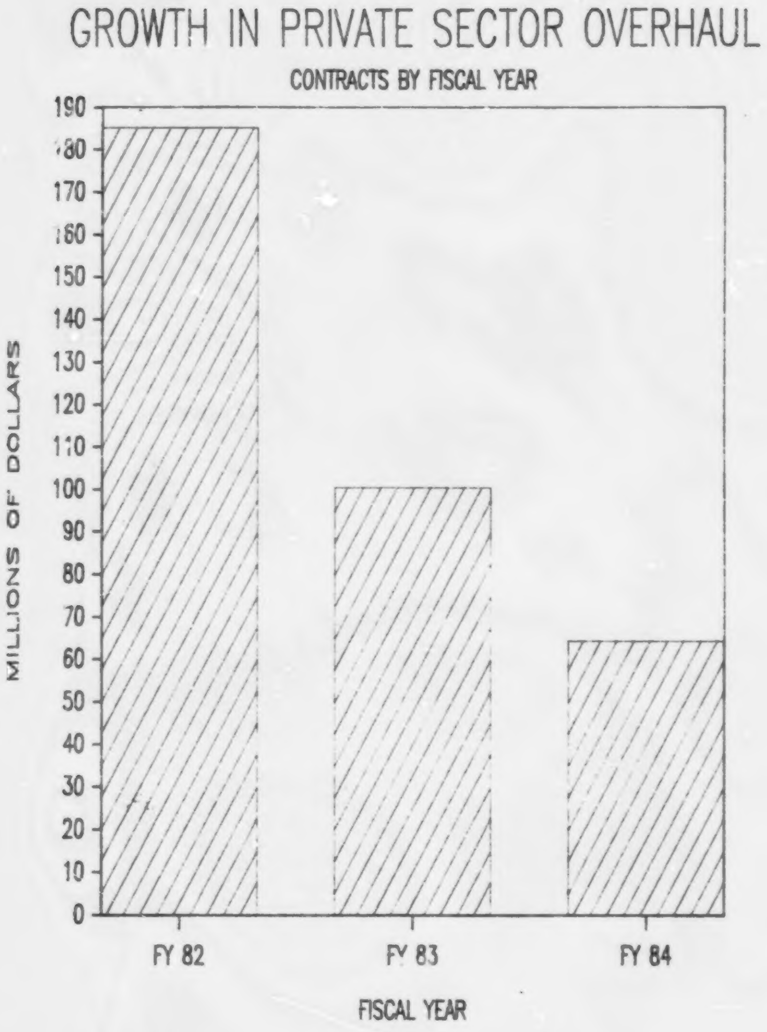
Regionally, SUPSHIP Pascagoula, MS has completed seven cost contracts, all early. By using the same criteria as on fixed priced contracts, four of these availabilities would have been considered to be 'buy ins. Each of the four, however, completed significantly below the original government estimate at the start of the availability. Six of the seven cost contracts at Pascagoula completed below the original government estimate. This fact is significant since in each work package there is some growth. No other regional area with a significant representation of the cost type contracts was able to quite duplicate Pascagoula's accomplishments. SUPSHIP Bath, ME, however, achieved almost as impressive an outcome. Five cost contracts completed in Bath, all early. One finished under the original government estimate while four ranged only slightly over.

Even though quality performance on cost contracts has been good, a generalization can not be made across the entire ship repair industry. The majority of overhauls under cost type contracts have been conducted by larger businesses which have stronger demonstrated managerial and technical expertise.

V. Conclusions

Apparent 'low balling' has not resulted in severe negative impacts on the Navy. Shipbuilders have achieved reasonable timeliness, cost control and quality work for the majority of overhauls assessed as 'buy ins'. however, apparent 'low balling' or 'buying in' can severely impact a Supervisor of Shipbuilding's ability to efficiently manage contracts. Contracts awarded significantly below the government's estimate cause the contractor to employ contract administrative strategies which are designed to maximize contract growth and minimize costs. Dramatic reductions in growth have occured over the past three years (Figure 6). This trend is attributible to a number of Navy management initiatives including improvements in our specifications, the use of fixed price contracts, and expansion of the bid area for overhauls. Both fixed price and cost plus contracts have experienced significant decreases in growth with the fixed price contracts performing generally better.

The practice of 'low balling' has been a regional rather than industry-wide phenomenon. Awards having the appearance of 'buy ins', however, have occurred in all areas of the country. The Navy uses all means at its disposal to preclude a contractor from 'buying in' and we will continue to focus management attention on those areas identified as susceptible to 'buy ins'. Although a 'buy in' does not necessarily produce a negative impact on the cost, quality or schedule of an overhaul, it distorts the contracting process, and must be minimized.



GROWTH IN PRIVATE SECTOR OVERHAUL

CONTRACTS BY FISCAL YEAR

Figure 6

SHIP REPAIR WORK

Question. Provide for the record the total dollar amount in contracts to homeport yards on the East, West, and Gulf coasts for overhaul and other repair work. Also provide this information for non-homeport yards. It should be further broken down to show total dollars for contracts by Naval Supship districts.

Answer. The total dollar amounts for contracts in homeport and non-homeport areas are as follows:

PRIVATE CONTRACTS—OVERHAUL AND REPAIR WORK

	Fiscal year—	
	1985	1986
Homeport area:		
East	$733,630,467	$329,471,517
West	399,053,977	253,458,886
Gulf	791,336	3,288,001
Total	1,133,475,780	586,158,404
NonHomeport area:		
East	33,465,308	36,155,951
West	0	0
Gulf	99,624,872	18,979,355
Total	133,090,180	55,135,306

The attached Data Sheets provide the information requested for Supervisors of Shipbuilding, Conversion and Repair, USN (SUPSHIPs) in detail. The following should be noted concerning the Data Sheets:

Applies to contractors holding NAVSEASYSCOM Master Ship Repair Agreements (MSRAs) and Agreements for Boat Repair (ABRs).

Does not include any ship overhaul or repair work for Military Sealift Command (MSC), U.S. Coast Guard, U.S. Army, or any other Federal agencies.

Does not include SUPSHIPs Pearl Harbor, HI and Sturgeon Bay, WI.

OPNAVINST 4700.7G of 20 August 1984, Subj: Maintenance of Ships; Policies and Procedures for, with Changes 1 and 2, thereto, of 17 October 1984 and 29 May 1985, respectively; and OPNAVNOTE 4700 of 21 May 1985, Subj: Policies and Procedures for Maintenance of Ships, govern the designation of homeport areas, etc.

FY86 amounts are through the second quarter thereof. All amounts stated are in Operation and Maintenance, Navy (O&M,N) dollars.

SUPSHIP SEATTLE, WA

	Fiscal year—	
	1985	1986
Homeport area:		
Boeing Marine Systems, Seattle, WA	$103,185	$132,828
Dumwamish Shipyard, Inc., Seattle, WA	715,878	518,195

SUPSHIP SEATTLE, WA—Continued

	Fiscal year—	
	1985	1986
Fisherman's Boat Shop, Inc. Everett, WA	$320,746	0
Lake Union Drydock Co., Seattle, WA	5,508,781	$2,739,677
Marine Industries NW, Inc., Tacoma, WA	1,967,004	0
Marine Power & Equipment Co., Seattle, WA	1,258,588	1,576,626
Northwest Marine Iron Works, Portland, OR	24,883,561	10,037,121
Todd Pacific Shipyards, Inc., Seattle, WA	16,180,651	17,959,323
Total	50,938,394	32,963,770

Note: Ports are at Seattle, Bremerton, Everett, Tacoma, Washington, and extended ports (considered Homeport area in Portland Oregon).

SUPSHIP SAN DIEGO, CA

	Fiscal year—	
	1985	1986
Homeport area:		
A & E Industries, Inc., National City, CA	$11,875,847	$4,926,464
Arcwell Corporation National City, CA	27,688,144	16,509,503
Bay City Marine, Inc., National City, CA	14,192,097	9,360,660
Campbell Industries, San Diego, CA	1,643,213	3,405,613
Continental Maritime of San Diego, CA San Diego, CA	23,385,157	17,175,709
Kettenburg Marine, San Diego, CA	1,935,027	797,395
National Steel & Shipbuilding Co., San Diego, CA	71,611,871	22,578,780
RMI, Inc., National City, CA	13,094,338	2,301,120
Southwest Marine, Inc., San Diego, CA	27,724,856	14,891,356
Triple 'A' South San Diego, CA	29,035,614	14,732,253
Total	222,186,164	106,678,853

Note: Port is at San Diego, California.

SUPSHIP LONG BEACH, CA

	Fiscal year—	
	1985	1986
Homeport area:		
Al Larson Boat Shop, Terminal Island, CA	$2,072,570	$1,650,502
San Pedro Boat Works, San Pedro, CA	1,040,840	1,169,374
Southwest Marine, Inc., Terminal Island, CA	17,326,752	11,003,716
Todd Pacific Shipyards, San Pedro, CA	10,920,950	0
Totals	31,361,112	13,823,592

Note: Port is at Long Beach, California.

SUPSHIP NEW ORLEANS, LA

	Fiscal year—	
	1985	1986
Homeport area:		
Boland Marine & Mfg. Co., Inc., New Orleans, LA	$175,715	$8,476
Dixie Machine Welding & Metal Works, New Orleans, LA	72,626	0
Lamarco, Inc., New Orleans, LA	6,440	0
Saucer Marine Services, Inc., New Orleans, LA	72,413	0
Total	327,194	8,476

SUPSHIP NEW ORLEANS, LA—Continued

	Fiscal year—	
	1985	1986
Nonhomeport area:		
Coastal Marine, Orange, TX	$49,818	0
Total	49,818	0

Note: Port: None.

SUPSHIP NEWPORT NEWS, VA

	Fiscal year—	
	1985	1986
Homeport area:		
Newport News Shipbuilding and Drydock Co., Newport News, VA	$238,604,465	$146,175,608
Total	238,604,465	146,175,608

Note: Port is at Norfolk, Virginia.

SUPSHIP JACKSONVILLE, FL

	Fiscal year—	
	1985	1986
Homeport area:		
Atlantic Drydock Corp., Ft. George Island, FL	$15,247,707	$2,412,765
Atlantic Marine, Inc., Ft. George Island, FL	26,277,076	9,435,555
Huckins Yacht Corp. Jacksonville, FL	29,841	670
Jacksonville Shipyard, Inc., Jacksonville, FL	51,630,007	21,989,806
North Florida Shipyard, Inc., Jacksonville, FL	5,151,414	6,557,337
Runyan Machine & Boiler Works, Inc. Pensacola, FL	1,198,663	29,533
Total	99,534,708	40,425,666
Nonhomeport area:		
Marine & Industrial Services, Inc. San Juan, PR	325,634	47,083
Miami Shipyards, Inc., Miami, FL	0	18,996
Puerto Rico Drydock & Marine Terminals San Juan, PR	46,046	138,091
San Juan Shipyards, Inc., San Juan, PR	318,505	2,712
Tracor Marine, Inc., Port Everglades, FL	61,056	0
Total	751,241	206,882

Note: Port is at Mayport, Florida.

SUPSHIP GROTON, CT—SUBMARINE WORK ONLY

	Fiscal year—	
	1985	1986
Homeport area:		
Electric Boat Division General Dynamics Corp., Groton, CT	$11,111,522	$11,310,206
Total	11,111,522	11,310,206

Note: Port is at Groton, Connecticut.

SUPSHIP CHARLESTON, SC

	Fiscal year—	
	1985	1986
Homeport area:		
Braswell Shipyards, Inc., Mt. Pleasant, SC	$15,626,067	$3,459,160
Darby Marine & Supply, Inc., Mt. Pleasant, SC	769,178	609,422
Delta Marine, Inc., Wando, SC	948,682	426,146
Detjens Shipyards, Inc., Mt. Pleasant, SC	13,247,537	3,403,692
Diamond Mfg. Co., Inc., Savannah, GA	697,887	37,863
Metal Trades, Inc., Hollywood, SC	15,774,332	5,564,607
Salmons Dredging Co., Charleston, SC	115,000	0
Swygert Shipyards, Inc., John's Island, SC	10,763,101	3,290,001
Thunderbolt Marine Industries, Savannah, GA	1,313,078	0
Wilmington Shipyards, Inc., Wilmington, NC	135,167	9,921
Total	59,390,029	16,800,812

Note: Port is at Charleston, South Carolina.

SUPSHIP BROOKLYN, NY

	Fiscal year—	
	1985	1986
Homeport area:		
Atlantic BC Inc., Brooklyn, NY	$23,485	0
Coastal Drydock & Repair Corp., Brooklyn, NY	62,804,364	$6,762,750
E & S Marine Services, Inc., Brooklyn, NY	205,579	441,336
Fischer Marine Repair Corp., Brooklyn, NY	1,302,076	77,478
G. Marine Diesel Corp., Brooklyn, NY	585,124	640,386
Hoboken Shipyard Inc. Hoboken, NJ	17,726,857	3,047,121
Perth Amboy Drydock Co., Perth Amboy, NJ	639,191	0
Total	83,286,676	10,969,071

Note: Ports are at Earle, New Jersey, Bayonne, New Jersey, Brooklyn, New York, and Perth Amboy, New Jersey.

SUPSHIP BOSTON, MA

	Fiscal year—	
	1985	1986
Homeport area:		
Boston Shipyard Corp., Chelsea, MA	$2,226,817	$104,358
R.E. Derecktor, Inc., Middletown, RI	419,871	359,231
General Ship Corp., East Boston, MA	33,139,024	18,535,492
Newport Offshore Ltd., Newport, RI	4,705,743	878,438
Promel Marine Svc. Corp., E. Providence, RI	210,157	610,014
Total	40,701,612	20,487,533

Note: Ports are at Boston, Massachusetts and Newport, Rhode Island.

SUPSHIP BATH, ME [1]

	Fiscal year—	
	1985	1986
Non homeport Area (to date):		
Bath Iron Works, Bath, ME	$30,086,388	$34,158,763
South Portland, South Portland, ME	228,480	431,000

SUPSHIP BATH, ME [1]—Continued

	Fiscal year—	
	1985	1986
Total	30,314,868	34,589,763

[1] There are no ships homeported under Bath cognizance.

Note: Ports are at Portland, Maine, and Portsmouth, New Hampshire.

SUPSHIP SAN FRANCISCO, CA

	Fiscal year—	
	1985	1986
Homeport area:		
Anderson & Cristofoni, San Francisco, CA	$93,866	$127,827
Calberg, Inc., Stockton, CA	399,388	97,310
Continental Marine of SF, Inc., San Francisco, CA	18,921,747	23,185,640
Fulton, Shipyard, Antioch, CA	246,966	528,757
General Engineering & Machine Works, San Francisco, CA	1,990,601	26,665
Pacific Drydock & Repair Co., Oakland, CA	799,863	2,400
Service Engineering Co., San Francisco, CA	19,746,912	16,828,304
Southwest Marine of SF, Inc., San Francisco, CA	19,869,654	17,448,846
Todd Shipyards Corp., San Francisco, CA	23,299,139	16,549,622
Triple 'A' Shipyard, San Francisco, CA	9,116,797	25,149,236
West Winds, Inc., San Francisco, CA	83,374	48,064
Total	94,568,307	99,992,671

Note: Ports are at San Francisco, Oakland, Concord, Vallejo, and Alameda, California.

SUPSHIP PASCAGOULA, MI [1]

	Fiscal year—	
	1985	1986
Homeport area:		
Runyan Machine & Boiler Works, Inc., Pensacola, FL	$464,142	$3,219,525
Total	464,142	3,219,525
Nonhomesport area:		
Alabama Drydock & Shipbuilding, Corp., Mobile, AL	20,199,451	128,618
Bender Shipbuilding & Repair Co., Inc., Mobile, AL	2,020,331	0
Ingalls Shipbuilding Div., Litton Industries, Inc., Pascagoula, MS	77,355,272	18,850,737
Total	99,575,054	18,979,355

[1] Port is at Pensacola, Florida.

SUPSHIP NEW ORLEANS, LA

	Fiscal year—	
	1985	1986
Homeport area:		
Boland Marine & Mfg. Co., Inc., New Orleans, LA	$175,715	$8,476
Dixie Machine Welding & Metal Works, New Orleans, LA	72,626	0
Lamarco, Inc., New Orleans, LA	6,440	0
Saucer Marine Service, Inc., New Orleans, LA	72,413	0
Total	327,194	8,476

SUPSHIP NEW ORLEANS, LA—Continued

	Fiscal year—	
	1985	1986
Nonhomeport area:		
Coastal Marine, Orange, TX	49,818	0
Total	49,818	0

[1] Note: Ports: None.

SUPSHIP PORTSMOUTH, VA

	Fiscal year—	
	1985	1986
Homeport area:		
Alco Welding & Machine Co., Inc., Norfolk, VA	$368,937	$710,840
Associated Naval Architects, Inc., Portsmouth, VA	3,491,417	1,958,130
Bethlehem Steel Corp., Baltimore, MD	620,209	0
Blyth & Son, Inc., Suffolk, VA	58,461	0
Colonna's Shipyard, inc., Norfolk, VA	14,589,562	4,816,123
Davis Boat Works, Inc., Newport News, VA	2,778,752	825,099
Hampton Marine Railway, Inc., Hampton, VA	698,198	0
Holmes Bros Enterprises, Inc., Suffolk, VA	1,941,550	1,746,406
Jonathan Corp., Norfolk, VA	29,030,034	23,387,461
Lyon Shipyard, Norfolk, VA	1,672,131	579,360
Marine Hydraulics Int'l, Inc., Norfolk, VA	10,519,885	3,731,393
Metro Machine Corp., Norfolk, VA	50,429,312	15,979,884
Moon Engineering Co., Inc., Norfolk, VA	8,355,957	6,271,959
Norfolk Shipbldg & Drydock, Corp., Norfolk, VA	72,577,824	20,331,110
M & W Marine Services, Newport New, VA	0	406,000
Quality Boat Co., Inc., Portsmouth, VA	47,576	92,880
Superior Marine, Portsmouth, VA	0	274,980
Todd Electric Co., Norfolk, VA	3,821,650	2,190,996
Total	201,001,455	83,302,621
Non-Homeport Area:		
Barbour Boat Works, Inc., New Bern, NC	2,176,088	685,960
Phillyship, Inc., Philadelphia, PA	0	168,800
Yacht Maintenance Co., Inc., Cambridge, MD	223,111	504,546
Total	2,399,199	1,359,306

Note: Ports are Norfolk, Virginia and Little Creek, Virginia.

Question. In the continuing resolution signed into law in December, you were directed to open up Naval Reserve vessel repair opportunities to coastwide bidding because of the minimal impact on personnel and the positive benefit of increased competition. What have you done to implement this directive? How many repair opportunities do you have planned on the East, West, and Gulf coasts? On the West coast what vessels are they and when do you expect to award the contracts?

Answer. The Assistant Secretary of the Navy (Shipbuilding and Logistics) has established policy concerning coastwide competition for Reserve Fleet availabilities. This policy mandates that all private sector Reserve Fleet scheduled availabilities will be competed on a coastwide basis regardless of availability duration. An exception to this policy is those Naval Reserve ships which do not share a homeport with the active fleet. As a result of this policy, twenty-four ships formerly scheduled for homeport solicitation have been rescheduled for coastwide bidding during the fiscal year 1986 and fiscal year 1987 timeframe.

To clarify the issue of planned availabilities for the East and Gulf coasts, there are no Reserve Fleet Ship availabilities specifically scheduled for Gulf coast bidding; however, the Gulf coast is included in the bidding area for all coastwide solicitations for the East coast. For the remainder of fiscal year 1986 and through the fourth quarter of fiscal year 1987, there are 25 scheduled Reserve Fleet ship availabilities. The following breakout provides status:

11 East coast availabilities: 9 Coastwide area solicitations; 2 Homeport area solicitations based on exception policy noted above.

14 West coast availabilities: 13 Coastwide area solicitations; 1 Homeport area solicitation based on exception policy above.

The following West coast availabilities are listed with scheduled award dates:

Name and hull number	Avail.	Sol. area	Schd. award
Pledge (MSO-492)	ROH	CWA	08/01/86
Gallant (MSO-489)	ROH	CWA	07/15/86
Excel (MSO-439)	ROH	CWA	08/22/86
Lang (FF-1060)	SRA	CWA	12/12/86
Esteem (MSO-438)	ROH	CWA	02/02/87
Implicit (MSO-455)	DSRA	CWA	02/09/87
Constant (MSO-427)	DSRA	CWA	02/16/87
Wadsworth (FFG-9)	SRA	CWA	03/13/87
Reclaimer (ARS-42)	ROH	HPA	02/01/87
Bolster (ARS-38)	ROH	CWA	03/06/87
Puller (FFG-23)	DSRA	CWA	05/27/87
Enhance (MSO-437)	DSRA	CWA	08/07/87
Pluck (MSO-464)	DSRA	CWA	08/07/87
Conquest (MSO-488)	DSRA	CWA	08/21/87

[Clerk's note: End of questions submitted by Mr. AuCoin.]

TRIDENT SUBMARINE

Mr. Dicks. I would like to ask one question. There has been discussion about trying to bring competition into the Trident submarine program.

Does the Navy have any plans that you would like to share with the Committee about what it is considering there? I would assume that you are looking at Newport News as a potential competitor.

Admiral Rowden. Newport News is the only qualified potential competitor at the present time for nuclear type of work.

Mr. Dicks. Is it because of the size of the ship?

Admiral Rowden. No, sir, because of the nuclear work, not because of the size of the ship. We approached Newport News three or four months ago, asking them if they were interested in competing for the Trident submarine.

They responded that yes, they were, and we are continuing a dialogue with Newport News on that now to determine their readiness, to be able to do that.

Mr. Dicks. Are you concerned because you feel the cost of the Trident is too great or the quality of the work has been a problem?

Admiral Rowden. It is the cost. It is not the quality of the work. That is the only ship that is not competed. We are convinced that we drive costs down and control costs somewhat in competition.

Therefore, we think we should move in that direction.

SSN-21 ATTACK SUBMARINE

Mr. Dicks. Has the SSN-21 program been officially approved to proceed with full-scale development by the DSARC at Milestone II? When is this expected to occur?

Admiral Rowden. No, at the present time. The Milestone II DSARC comes in September of this year.

Mr. Dicks. Has this date slipped in the past year, and if so, what caused the slip?

Admiral Rowden. To my knowledge, it has not slipped in the past year. I believe that has been steady.

Mr. Dicks. Is it usual Naval practice to request procurement funds of the magnitude of this ship when you have not yet had approval for full-scale development?

Admiral Rowden. I believe in the case of this ship, this ship may be unique in that case, but the schedule for the production of the ship, authorization in 1989 for delivery in 1994 requires that the long lead procurement occur at the present time, so it is completely in the schedule for the ship.

Mr. Dicks. Fiscal year 1987 represents your first procurement request for the SSN-21 attack submarines. Your request totals $454.3 million for advance procurement items. At this point, how much more R&D funding is required for the SSN-21 program?

Admiral Rowden. Several hundred million dollars in R&D, but—and I will provide it exactly for you.

[The information follows:]

The estimated development costs from FY87 to FY91 are $1.34 billion in then-year dollars. There will be additional devellopment costs beyond FY91, however, due to the extended nature of the forecast beyond the FYDP years, firm dollar estimates are not available for FY92 and beyond. Notwithstanding, the total estimated developed cost from FY87 until completion is currently estimated to be at less then $2.0 billion in then-year dollars.

Mr. Dicks. Included in the advance procurement request is $266.5 million for nuclear propulsion components for the SSN-21. What types of equipment are involved in this request?

Admiral Rowden. Nuclear propulsion plant, nuclear type materials, I will provide that for you in detail, those particular items.

[The information follows:]

The $266.5 million covers all government furnished reactor plant equipment for the SSN 21 lead ship. This equipment makes up the entire reactor plant and includes the reactor core. Reactor plant components are the longest leadtime items required in the construction of nuclear submarines and therefore must be procured with advance procurement funds to support ship construction.

Mr. Dicks. What percentage of total R&D funding for development of the SSN-21 propulsion system has been appropriated and obligated through fiscal year 1986, and how much funding is still required?

Admiral ROWDEN. May I provide that for you, as well?

Mr. DICKS. You may.

[The information follows:]

Of the R&D funding for the development of the SSN 21 propulsion system through FY 86, 32 percent has been appropriated and 30 percent has been obligated as of 31 March 1986. In addition, the SSN 21 propulsion system will require $588.2M in R&D funding for FY87 through FY92.

Mr. DICKS. Propulsion plant mock-ups, which are used in part to confirm component designs, will not be completed until fiscal year 1987, according to your documents.

Are the components for which fiscal year 1987 long lead funding is requested included in these mock-ups?

Do that for the record, too.

Admiral ROWDEN. Yes, I will.

[The information follows:]

Yes, sir. The mockups include all the propulsion plant components in the FY87 request.

Mr. DICKS. Is it possible that evaluation of these mock-ups could lead to design changes for these components?

Admiral ROWDEN. We will comment on that as we answer.

[The information follows:]

The mockup work is sequenced to ensure that arrangements which could effect the long lead propulsion plant components will be firmed up prior to component procurement.

Mr. DICKS. Also, in fiscal year 1987, Navy intends to complete construction of a reactor plant model to evaluate the design and confirm compliance with ship noise goals. Is it possible that this R&D process could also result in redesign of components included in the fiscal year 1987 shipbuilding request?

Admiral ROWDEN. I think that is quite remote, but we will treat that also as we treat these other questions.

[The information follows:]

Models of propulsion plant components for which FY87 long lead funding is requested are being included to evaluate the adequacy of the structure supporting these components. No changes to components will result.

OVERHAUL OF TRIDENT SUBMARINES

Mr. DICKS. All right.

Admiral, as we look down the road, one question the gentleman from Washington has is the Navy's plan for the overhaul and repair of the Trident submarines that are stationed at the Trident submarine base at Bangor, Washington. Has the Navy made a decision yet on where those ships will be overhauled and repaired?

It has always been my understanding because of the proximity of the Puget Sound Naval Shipyard, that that would be where they would be overhauled and repaired.

Admiral ROWDEN. It would certainly be a first choice to put those ships in that shipyard. We have, as explained earlier, gone to full competition, public-private, for the overhaul of the SSBNs.

The overhaul facilities available for Bremerton, Newport News, soon to be Newport News, if they persist in their efforts in that regard, and there is a possibility of qualifying Electric Boat in Groton, and they are not now so qualified.

We overhaul those ships in Portsmouth, New Hampshire, and Charleston as well, so with a full and open competition, there is a possibility of some of those ships going to the East Coast.

We have not fully evaluated or wrestled with that problem, but I would say certainly initially, Bremerton would be the yard of choice for overhaul of those ships.

Mr. DICKS. You will have some ships based on the East Coast as well?

Admiral ROWDEN. Absolutely.

Mr. DICKS. At Kings Bay, Georgia, competed on a nationwide basis?

Admiral ROWDEN. Yes, sir.

Mr. DICKS. You are thinking about competition for those Tridents?

Admiral ROWDEN. Yes.

Mr. DICKS. When will these decisions be made?

Admiral ROWDEN. It has already been made for the competition by the overhaul of the Tridents, made by the Secretary about a month or two ago.

Mr. DICKS. When will that competition begin?

Admiral ROWDEN. It is beginning now for the overhaul of the SSBN-640, currently being competed between Charleston and Newport News, and followed by the other SSBN authorized for overhaul this year, which is the 643.

There are four, as I recall, in fiscal year 1987.

Mr. DICKS. When will—or when do you expect—when is the first overhaul of a Trident submarine, 1990 or 1991?

Admiral ROWDEN. I don't know. I will have to provide for that for you, for the Ohio class?

Mr. DICKS. Right.

Admiral ROWDEN. I don't recall.

[The information follows:]

The current schedule is for USS OHIO to commence overhaul in July 1991.

Mr. DICKS. So, you made a decision to compete, but when will the competition occur?

[No response.]

Mr. DICKS. You got these initial ships you are competing. It will be at the time when you decide you are going to overhaul it?

Admiral ROWDEN. Yes, sir, and we have a competition going on right now for the SSBN-640. She is not an Ohio class.

Mr. DICKS. I understand, but you have decided to compete, but you have not begun the competition on the Ohio class.

Admiral ROWDEN. No, we have not, you are correct.

Mr. DICKS. Please answer the rest of the committee questions for the record.

[CLERK'S NOTE.—Questions submitted for the record and the answers thereto follow:]

AOE FAST COMBAT SUPPORT SHIP

Question. The Navy is requesting $612.7 million for the procurement of one AOE Fast Combat Support ship. Was this ship downsized in any way since the initial ship estimate was over $200 million higher than your current estimate? If so, is the Navy placing itself in a position that will necessitate future enlargement of this ship?

Answer. The AOE-6 class leadship estimate has declined over $200 million dollars. This decline is a result of many factors including current competitive market conditions, lower escalation indices, design and produceability improvements as well as reducing the size of the ship.

In 1983 the AOE-6 class ship design was downsized 55 feet. This reduction in size was made to reduce acquisition cost. Inherent in this size reduction is a reduction in capacity. Fuel oil capacity was reduced from 177KBBLS to 156KBBLS, cargo ammunition from 2400 tons to 1800 tons and chill/freeze capacity from 500 to 400 tons. Both the ammunition and chill/freeze capacity are greater in AOE-6 than the existing AOE-1 class ship. The fuel oil capacity is less than originally desired, however improving the tank design allows a greater percentage of fuel to be pumped off before ballasting is required. Thus AOE-6 is more useable. It is not envisioned that the modest reductions in capacity will necessitate a future enlargement of this ship.

Question. Could you tell us what is so unique about this ship that it's cost, as presented in your budget, represents the cost of three, nearly four, T-AO fleet oilers?

Answer. The AOE-6 class ship is a fully military capable ship built to combatant standards and capable of 26 knots of speed. The TAO-187 class does not have these attributes.

The AOE-6 class is significantly larger than the TAO-187 class. The AOE is 78 feet longer and 8,500 tons greater in displacement. The AOE is a multi-product ship carrying fuel, ammunition and cargo. The ammunition capability makes special weapons elevators and handling equipment necessary.

The AOE-6 class provides a defensive combat system. This includes NATO Sea Sparrow, Close In Weapons System (CIWS), MK-23 Target Acquisition System (TAS), and the SLQ-32 V3, electronic warfare suite with a decoy launching system and the Nixie acoustic decoy. The TAO-187 includes only Nixie.

The AOE-6 class is constructed to military standards which require shock, blast and fragmentation protection. The AOE survivability features include a Collective Protection System for utilization in chemical, nuclear, and biological warfare environment. The TAO-187 is built to commercial standards (USCG certified, ABS classed) which do not require these features.

The AOE-6 is a 26 knot ship which can fully support and hangar two helos. The TAO is a 20 knot ship with vertrep capability only.

AOE-6 is a ship designed to operate as an integral member of the carrier battle group. The requirements of operating in this environment mandate capabilities which place the AOE in a substantially higher cost bracket than the TAO-187 shuttle oiler.

Question. Could an AE and AO/TAO be substituted for an AOE-6, especially since their combined estimated cost is less than the estimated cost for one AOE-6 and their overall cargo capacity is greater?

Answer. Current fleet practice is to use an AE and AO/TAO when a battle group station ship is not available. This situation places the battle group at increased risk. By using an AE and AO the advantages of multiproduct delivery and higher battle group speeds are lost.

A multiproduct delivery ship (AOE) can supply all of a combatant's requirements during one replenishment evolution. This reduces the time during which the combatant is unavailable for warfighting. For example, the aircraft carrier is flight operations restricted during underway replenishment. By using the single product delivery ships the amount of time that the carrier is restricted could double.

The AOE is a 26 knot ship designed to run with the battle group. The slow moving AO/AE combination places restraints on the battle group commander. Battle group tactical flexibility is reduced by the incumbrance of the logistics tail. The vulnerability of the entire battle group is exposed when the battle group speed is dictated by the slower AO/AEs.

Question. What impact would this substitution have on force level requirements and costs?

Answer. It would be necessary to substitute an AE/TAO for each AOE just to make up the capacity requirement. However, satisfying the capacity requirement does not address all the tactical flexibility, survivability and self defense addressed in questions 1A and 1B. If all of the battle group required features of speed, survivability and self defense were built into an AE/AO combination the overall program costs would be higher. To make a realistic comparison, one would have to compare an AO and AE built to fully military capability versus the AOE.

Question. Has your contract design been completed, and if not, when do you anticipate completing it?

Answer. Yes. The contract design is complete, and was signed on 14 February 1986.

Question. Does your request represent a class C budget quality estimate?

Answer. Yes. $612.7M is considered a class C budget quality estimate.

DDG-51 DESTROYER

Question. Last year's budget estimate for the DDG 51 called for two ships in FY 1987, yet you have three in this year's request. Do you plan on competing this year's procurement, and if so, how and when do you intend to proceed with the competition?

Answer. We will compete the FY 87 procurement by dividing the three ships into one lot of two ships and one lot of one ship.

Question. Have you established a cost objective for these ships, and how does that compare to the cost of a CG 47?

Answer. The cost objectives for CG 47 and DDG 51 are as shown in the FY 87 budget submission. The "average unit cost" of the three FY 87 destroyers is less than the "average unit cost" of the two FY 87 cruisers.

Question. The Navy's Five Year Shipbuilding and Conversion plan for FY 1986 through FY 1990 showed two ships being procured in 1987 and five ships per year for fiscal years 1988, 1989, and 1990. This same plan for FY 1987 through FY 1990 now has three ships per year being procured.

What impact does this have on the Navy's plans to have three shipbuilding companies participate in the shipbuilding program?

Answer. It is still possible for these shipyards to participate in the AEGIS cruiser and destroyer programs.

Question. The Rankine cycle energy (RACER) system converts the exhaust heat from a ship's gas turbine engines into useful steam power. If the RACER system performs as expected, it would increase the cruising range of the DDG 51 class ships by over 20 per cent. In the FY 1986 Appropriations Bill, Congress directed the Navy to discontinue plans for RACER installation on the lead ship of the DDG 51 class because of testing delays. Congress stated that testing delays on the RACER system could cause the DDG 51 ship construction schedule to slip more than a year and incur a cost increase in excess of 15 per cent of basic construction cost. Congress directed the Navy to continue development of RACER installation plans for future Navy ship construction programs, concurrent with the ongoing RACER test program. What is the status of the RACER system?

Answer. In view of insurmountable development problems, we and the RACER development contractor have agreed to terminate the development contract.

Question. Have there been additional testing delays, and if so, what effect will the delays have on the program costs of the DDG 51?

Answer. In view of termination of the development contract, testing will not be completed. By not installing RACER on the DDG 51 class ships, we will avoid RACER acquisition and installation costs.

Question. On which ship of the DDG 51 class does the Navy plan to introduce the RACER system?

Answer. With termination of the development contract, we currently do not have a plan to introduce RACER into the DDG 51 class ships.

Question. Does the Navy have plans to backfit the RACER system in DDG 51 classs ships that are without the system?

Answer. With termination of the development contract, we do not currently have an approved RACER configuration that could be backfit into DDG 51 class ships.

Question. If so, how much will the projected backfit cost?

Answer. Because there is no approved RACER configuration and the development contract is terminated, we can not speculate on what it would cost to backfit RACER to DDG 51 class ships.

LPD-4 SERVICE LIFE EXTENSION PROGRAM [SLEP]

Question. This year's request for LPD-4 advance procurement funds represents the third time the Navy has come forth with a similar request. In FY 1984, your request was denied authorization and your FY 1985 appropriation remained unobligated for over a year. What assurances can you provide the Committee that the Navy intends to proceed expeditiously with this program?

Answer. The Navy is proceeding with the program, planning a FY 89 start. A draft Request for Proposals (RFP) was distributed to private industy for comment in January 1986. Industry comments received thus far indicate significant interest. An industry brief was held on 26 March 1986. The RFP will be released in May 1986 with award of the contract expected in December 1986.

Question. Since the Navy's most recent postponement of the LPD-4 SLEP start was due to its lack of high priority, what impact might Gramm-Rudman-Hollings have on this program? Is it possible that this program may be delayed further?

Answer. All shipbuilding programs are intensively reviewed every year. Since regular overhauls (ROH) have been deferred on the supposition that SLEP would be done instead, it is clear that if the program is rendered unexecutable, then ROHs would have to be inserted in their place and funded out of OMN. In this eventuality no service life extension would be achieved and a new shipbuilding program to replace the LPD-4 class ships would have to begin in the mid 1990s.

Question. How old are these ships, and how many years of additional service life will this SLEP provide?

Answer. The ship will average 23.2 years in service upon completion of SLEP. The SLEP will provide service life extension out to 45 years.

Question. How many ships will be involved in the total program?

Answer. There are eleven ships in the LPD-4 class that will undergo SLEP.

Question. Where are they currently homeported?

Answer. The ships and their homeports are as follows:

Pacific Fleet: USS *Ogden* (LPD-5), Long Beach, CA; USS *Duluth* (LPD-6), San Diego, CA; USS *Cleveland* (LPD-7), Long Beach, CA; USS *Dubuque* (LPD-8), Sasebo, JA;[1] USS *Denver* (LPD-9), San Diego, CA; USS *Juneau* (LPD-10), San Diego, CA.

Atlantic Fleet: USS *Austin* (LPD-4), Norfolk VA; USS *Shreveport* (LPD-12), Norfolk VA; USS *Nashville* (LPD-13), Norfolk VA; USS *Trenton* (LPD-14), Norfolk VA; USS *Ponce* (LPD-15), Norfolk VA.

Question. How much more R&D funding is required for this program?

Answer. Based on a recommendation by the Senate Armed Services Committee in their report on the FY86 budget request, the design effort has been budgeted in R&D through FY86, budgeted in the SCN appropriation in FY87 in a separate line item titled "Contract Design." The requirements for the LPD SLEP are as follows:

[In millions of dollars]

Fiscal year:	
1987	8.4
1988	5.3
1989	5.5
1990	5.1
1991	5.1

Question. Has your contract design been completed, and if not, when will it be?

Answer. Yes, the contract design for the lead ship has been completed. The out-year funding is required for contract design of ship-unique alterations and design changes on the other ten ships.

Question. Have you completed all your "Open and Inspections", and if so, in what material condition are these ships?

---

[1] *Dubuque* will return to the U.S. for SLEP.

Answer. "Open and Inspections" will not be used to define the repair portions of the individual SLEP Work Packages. Work definition and repair planning will be accomplished by the SLEP contractor using a Government furnished pre-SLEP tests and inspections plan to determine material condition base upon operating parameters during the 2-year planning phase which precedes SLEP. The use of this planning procedure will minimize the need for "Open and Inspect" type work definition during the availabilities.

Question. When do you plan on issuing a request for proposal and awarding the contract?

Answer. The Navy plans to issue the request for proposals during May 86 and award the contract December 86.

Question. In July 1983, the Navy stated that the SLEP will be performed on both coasts in private yards. In this still the plan?

Answer. Yes, the Navy intends to award the LPD SLEP contracts using full and open competition on a coastwide basis.

MSH—MINESWEEPER

Question. To date, Congress has provided funds for five MSH minesweepers. This year's request shows funding for four more ships. Unfortunately, the MSH has experienced numerous problems involving weight, shock, and noise, and during tests of a major section of the glass-reinforced plastic wood hull, cracking occurred. Additionally, Bell's costs for the lead ship are close to the contract ceiling, even though the ship is about 16 percent complete. Likewise, the Isotta Fraschini engines continue to experience performance problems. Briefly discuss some of these problems and tell us what actions you intend to take to make sure we don't have problems similar to the MCM program?

Answer. The MSH is an industry produced design unlike the MCM which was a Navy design. The contractor is responsible for a design that meets the ship requirements document. Unlike the MCM program, the MSH contractor is using a test section to gather data and validate design solutions to key technical risks prior to production. The Navy has been working closely with the contractor during the detail design phase and we are proceeding cautiously. There are several technical risk areas which are being worked by the contractor and monitored very closely by the Navy. These include shock worthiness of the structure, noise attenuation weight growth and development of the Isotta Fraschini diesel engines. Increased engineering effort is taking longer and costing more than the contractor had planned, but it is necessary to ensure a valid design. The contractor has voluntarily delayed start of construction as a result of the initial shock tests. Additional tests will be conducted. The Navy will not proceed with the program until we are satisfied with the design and the program.

Question. Do you intend to let the contractor proceed with full production of the first ship at this time, or will you wait until all shock tests are completed and analyzed before you proceed?

Answer. The Navy does not intend to proceed with full production of the first ship until physical validation of the structural design is complete. The contractor has already voluntarily stopped the start of lead ship production pending additional shock tests to the test section. Subsequent to these data-gathering tests, the contractor will present a plan for additional risk resolution and testing that will be required to validate changes to MSH design and thereafter proceed with production.

Question. Can we anticipate additional funding requests to cover growth, and if so, what amount will be required?

Answer. Yes, additional funding will be required. The contractor has currently delayed start of construction and is developing a plan for additional design and testing prior to production start-up. The existing budget was based on target price, not ceiling. This is normal practice. The Navy was already estimating that the contract ceiling would be exceeded. The amount of additional funding required cannot be determined until the contractor's plan is received and agreed to by the Navy.

Question. When do you intend to award the fiscal year 1986 contract?

Answer. The contractor has notified us that they are currently reviewing the design based on where they are to date. This will be discussed with the Navy. The present contractual option period ends 30 April 1986, and the contractor has been requested to extend this date. The four FY-86 option ships will not be awarded until the Navy is convinced the structual and other technical risks are resolved.

Question. Since you have fixed priced contracts with options, will the Navy face a cost penalty if any changes are made to the contract?

Answer. The cost impact of MSH-1 changes will have an impact on the FY-86 and FY-87 options. The cost impact of any shipbuilding contract changes will be proposed by the contractor, evaluated by the Government, and negotiated. The cost effect of changes issued to date have been negotiated for the MSH-1 (now contracted) and the FY-86 and FY-87 options. If a modification to the current contract was made changing the quantity of ships in either option, significant cost increases could be expected on the remaining ships with the current shipbuilder.

Question. During our hearings with Secretary Lehman, he was somewhat surprised at the relatively slow speed requirement for the MSH. Why would the Navy have such a slow requirement for an SES type ship which one of its primary advantages is speed?

Answer. MSH ships are ——— surface effect ships in conformance with the NDCP and TLR for MSH ships. When the speed requirements for the MSH were first established, it was not known what hull form would be used in the winning design. SES hulls produce a substantially lower in water signature and greater resistance to shock while operating on cushion, two highly desirable qualities for ships engaged in mine clearance. Although higher speeds would be desirable if mine countermeasures sequencing from one port to another were required, a 10 knot capability is more than adequate when operating within a minefield. When thinking of traditional surface effect ship applications, higher speeds are automatically associated with that hull form. Space, weight and cost are primary limiting factors in attempting to achieve higher MSH ships speeds than stipulated in the design specifications. No effort is ongoing that would upgrade the performance of MSH engines.

Question. During last year's hearing, the Committee asked whether the Navy was considering introducing a second source in the MSH program to set a basis for competition. The answer at the time was to the effect that the Navy did want to introduce competition, but that it was rethinking the methodology to be followed. Has the Navy developed specific plans for the introduction of a second source for the MSH program?

Answer. At this time, the Navy is pursuing its current acquisition strategy of competing the contract for the FY-88 and 89 ships (MSH 10-17). This flight of eight ships would be a fixed priced contract, winner take all.

Question. Given the unique nature of the MSH, both in terms of design and the materials being used, does the Navy foresee any significant problems in initiating a second source?

Answer. The MSH design is a Surface Effect Ship (SES) utilizing a structure totally of Glass Reinforced Plastic (GRP). No other shipbuilder has built an SES and very little experience is available in GRP production in this country for a ship of this size. Therefore any second source would be inexperienced in two significant aspects of the design and would be expected to experience problems. These problems can be controlled by development of proper contract provisions for lead/follow ship contractor technology transfer and by proper timing of the selection of a second source. Any second source must be able to become familiar with the design, technology and production of the MSH before they compete for any multiple ship contract.

OCEAN RESEARCH SHIP

Question. Your budget includes a request of $33 million for an Ocean Research Ship. Could you tell us when this requirement was established? Why did it not show up in last year's five year plan?

Answer. The requirement for this ship was established in July 1984 as part of Navy's plan to reinvigorate oceanography. This plan includes the procurement of a Navy-owned oceanographic research ship in FY87 for use by the civilian academic research community. This programming action was initiated after the preparation of the five year plan that accompanied the FY86 budget.

Question. How much R&D work has been performed to date, and how does that translate into dollars? Has contract design been completed, and if not, when is it scheduled for completion? What is your total requirement for these ships?

Answer. Feasibility studies, concept designs and cost-feasibility trade offs have been completed for both monohull and Small Waterplane Area Twin Hull (SWATH) designs. This effort has required $366 thousand in FY-85 and $767 thousand in FY-86. The final contract design will result from industry's response to the Request for Proposals (RFP) which will be released in July 1986. The contract design will be completed in February 1987 for a competitive award in June 1987.

This ship is the first in a plan to revitalize Navy's oceanographic ship fleet, which is aging, suffering from block and technological obsolescence, and single mission 1960's designs. Follow-on ship building efforts will continue through FY 92. Ten replacement ships are planned to meet Navy mapping, charting and geodesy (MC&G), oceanographic survey and oceanographic research requirements. This plan is consistent with Navy's objective to insure appropriate deep ocean platforms are available to meet operational and research oceanographic requirements.

SERVICE CRAFT

Question. Last year, the Congress appropriated $62.7 million for Service Craft programs. However, there was a stipulation that $25 million was intended to be the ceiling price for the torpedo range tender which was to be designed to commercial standards. What action has been taken to date in this regard?

When can we expect a contract award, and how long will it take to deliver this craft (YTT)?

Answer. Assuming that funds are authorized, Circular of Requirements (COR) and solicitation are in preparation for procurement of the torpedo range tender (YTT). Plans are to release the solicitation in the third quarter (FY86) with contract award in the fourth quarter (FY86). The craft is being designed to commercial standards. Conversion of an existing commercial hull or modification of commercial craft design will be permitted. Delivery of the craft will be required within 36 months from contract award.

Question. Does your FY87 request include funding for a second torpedo range tender, and if not why was it excluded?

Answer. A second torpedo range tender is included in the FY87 Congressional Budget Submission. This craft will be procured as a fully priced 1987 option to the contract for the first torpedo range tender which is to be awarded in FY86.

SSN-21 ATTACK SUBMARINE

Question. Also included in this year's SSN-21 request is $121.7 million for detailed design.

What is the planned date of contract award for SSN 21 detail design?

Answer. The planned award date for the SSN 21 detail design contract is December 1986.

Question. How much of SSN 21 detail design funding will be allocated to the design agent contract, and how much will be allocated to the design monitoring contract?

Answer. SSN 21 funding to be allocated to each detail design agent contract is unknown at this time. The detail design contract will be awarded under competitive conditions and the price offers of the shipyard for this effort will be unavailable until proposals are received in August 1986.

Question. The award for SSN 21 contract design was initially scheduled for 1 June 1985. However, this date slipped when the Navy decided to award design contracts to both shipbuilders. When were these awards eventually made, and what impact did the schedule slippage have on the beginning date for detailed design?

Answer. Contract awards for SSN 21 contract design were awarded to Newport News Shipbuilding and Dry Dock Co. in July 1985, and to Electric Boat Division in August 1985. The impact of schedule slippage of these contract awards is negligible.

Question. What was the Navy's estimate for FY87 long lead procurement for SSN 21 detail design in the FY86 President's budget?

Answer. The Navy's estimate for FY87 long lead procurement for SSN 21 detail design in the FY86 President's budget was $142.5 million.

T-AGOS OCEAN SURVEILLANCE SHIPS

Question. During the FY85 shipbuilding hearing, the Committee discussed at length its concerns over the problems that have plagued the T-AGOS program. Congress has provided nearly $450 million for the first 12 ships, all of which should have been delivered by now. Navy officials have recently indicated that we may very well *not* get all 12 of these ships from the contractor. What is the current status with respect to the first 12 T-AGOS ships, and will the Navy receive all 12 ships from the contractor?

Answer. We expect that a Contract Modification in March 1986 will cover completion of T-AGOS 9 and 10 by TBC with remaining contract and bond funding. It also will cover close out of T-AGOS 11 and 12 work and transfer of contractor purchased materials for these ships to the Government.

Question. In July 1984, a $13.2 million performance bond was purchased to assure completion of the remaining ships. Did the Navy directly, or indirectly, pay any portion of the cost for this bond, and if so, how much was paid?

Answer. Yes. The Navy modified its contract with TBC to provide funding in the amount of $1.4M directly for the performance bond premium.

Question. If TACOMA Boat defaults, what are the Navy's options for successfully completing these ships, and does the Navy intend to take any further action?

Answer. With the Bankruptcy Court's permission, the following options may be pursued:

1. Pay TBC to complete those hulls which cannot be moved (9 & 10) either thru "launch" or "delivery" and recompete hulls 11 & 12 utilizing the material already on hand.
2. Recompete all remaining work in place at TBC (successful bidder to utilize TBC facility).
3. USN assumes control of TBC facility thru launch of hulls 9 and 10, then recompete remaining work on Hulls 9-12 to be done at a new facility.

Question. Do you anticipate major legal implications that could further delay the program?

Answer. No major legal implications that could further delay the program are anticipated at this time.

Question. Do you foresee any additional requests for cost growth funding, and if so, how much do you estimate will be required?

Answer. The Navy does not foresee any additional requests from TBC for cost growth funding for T-AGOS 9 and 10. However, additional funds will be required for the completion of T-AGOS 11 and 12. The estimate for this will be completed in about 4 months.

Question. Will the outstanding issues be resolved by the time we mark-up the bill, particularly since your request includes funds for three more T-AGOS ships?

Answer. The issues on TAGOS 9 and 10 will be resolved in later March 1986. The issues on TAGOS 11 and 12 will not be resolved prior to mark-up.

Question. On April 5, 1985, Halter Marine, Inc. was awarded the FY85 contract for two monohull ships (13 and 14) with options for two additional monohull ships each in FY86 and FY87. The option for FY86 ships was to be exercised by February 28, 1986. The Navy has requested an extension to April 30, 1986. Subsequent to this contract award, the Navy's plan for the FY86 T-AGOS has changed from two monohull ships to one monohull and one SWATH (dual hull) design ship. Have the Halter Marine T-AGOS contract options been renegotiated to reflect the change to one monohull ship in FY86?

Answer. No. A solicitation has been sent to Halter Marine requesting a proposal to restructure the contract for FY86 and FY87 options.

Question. How has this change affected the option cost for the ships?

Answer. The effect of the proposed option change on ship cost has not yet been determined.

Question. What is the status of your efforts to procure a SWATH T-AGOS?

Answer. The SWATH contract design will be complete on 7 April 1986, with production contract award planned for September 1986.

Question. Has the contract design been completed?

Answer. The SWATH contract design will be completed on 7 April 1986.

Question. What is the cost to design and procure the FY86 SWATH ship and is the FY86 appropriation adequate for this purpose? If not, how does the Navy plan to obtain the additional funds?

Answer. It is estimated that it will require $80M in FY86 for the design and construction of the ship. The FY86 appropriation alone is not adequate for this purpose. The Navy is currently trying to determine the source of additional funding.

Question. When do you anticipate awarding a contract?

Answer. Award of the SWATH T-AGOS contract is planned for 30 September 1986.

Question. Are the three T-AGOS ships for which funds are being requested in the FY87 budget going to be monohull or SWATH designed ships?

Answer. The funds requested for three FY87 T-AGOS ships are for three monohull designed ships.

Question. Are they included in the contract option change with Halter Marine; and what effect has this change had on their option costs?

Answer. The options are being requested from Halter Marine. This involves modifying the contract options for both FY86 and FY87. The price impact has not yet been determined.

TRIDENT SUBMARINE

Question In FY86, Congress appropriated funds for the 13th Trident submarine, all of which either have been built by, or are under contract or contract option to, General Dynamics' Electric Boat Division. On December 3, 1985, the Navy suspended General Dynamics from entering into or negotiating for any government contracts, effectively blocking the Navy from exercising its contract option for the 13th Trident. In response, Electric Boat has twice extended the option date and price for this boat, first from December 31, 1985 to February 15, 1986, then to March 15, 1986. The ban was lifted by the Navy on February 7, 1986. If this option is not exercised by the March 15, 1986 deadline, Electric Boat must decide whether to further extend the option agreement or demand that the Navy renegotiate the contract.

When does the Navy plan to exercise the contract option for the 13th boat? If so, are any additional program costs anticipated due to the delay in exercising the contract option for the FY86 funded TRIDENT?

Answer. The option for the 13th boat will be exercised on 14 March 1986. No additional costs will be included in the contract price due to the delay in exercising the option.

Question. How would re-negotiation of the contract for the 13th TRIDENT impact ship cost and delivery?

Answer. Re-negotiation would probably consume six to nine months, thus impacting ship delivery. Correspondingly, ship cost would also be increased.

Question. Navy officials indicated that a cost trends analysis was performed at General Dynamics' Electric Boat Division for Trident and SSN-688 class submarines. The primary concern of Navy officials was whether production cost savings achieved in the SSN-688 class construction effort have been realized in the Trident series.

Have production cost savings achieved in the SSN-688 class program occured to the same extent in the Trident series? If costs for Trident have not dropped comparably, what factors have contributed to the higher relative production?

Answer. Yes. In constant dollars, the estimated final price of the SSBN 738 (Group V), for which an option will be exercised on 14 March 1986, will be approximately 36 percent less than the average final price for the four ships in Group I.

PUBLIC/PRIVATE OVERHAUL COMPETITION

Question. Mr. Secretary, the FY 86 Defense Appropriation Act increased the number of overhauls to be made available for the test competition between public and private shipyards from two to four.

Can you provide us with the results to date of the two competitions performed in FY 85?

Answer. The LPD 7 is scheduled to start overhaul 7 April 1986 at Long Beach Naval Shipyard. The overhaul is scheduled to complete 9 January 1987. The LPD 6 is 62 per cent thru overhaul at Northwest Iron Works, Portland, Oregon. The overhaul started 30 September 1985 and is scheduled to complete 29 June 1986. The overhaul is proceeding satisfactorily. A detailed report of the results of the 1985 competition will be published after completion of both ships.

Question. Are you satisfied that the competitions were performed equitably, with no unfair advantage to either side in the way of buy-ins or disguised overhead costs?

Answer. We believe the LPD 6/7 competition was performed equitably. As part of the selection process, costs were examined to insure the competition was equitable.

Question. What do you foresee in the future insofar as the competition between public and private shipyards is concerned, do you see it as a cost-saver and do you see a need to expand it about four overhauls?

Answer. We believe the Navy will benefit from public/private competition, and the expansion of the program beyond four ships should further enhance that benefit. Therefore, we have expanded the number of ships to eight.

COSTS TO OVERHAUL SHIPS—GAO REPORT

Question. The GAO issued a report which essentially documented average price increases over a contract award of 63 per cent for fixed-price contracts and 35 per cent for cost type contracts.

My first question is, do you agree with the figures presented by the GAO and, if so, do you see this as an indictment of the way you do business?

Answer. The figures presented by the GAO report are accurate. I do not agree that these increases are an indictment of the way we do business. The figures in the GAO study show that final costs were less than 15% higher than the original government estimates. The report should have emphasized the bargain the Navy got for its money. Not only did we get the original contracted work accomplished but we got *all* the "growth" and "new" work for only 15% more than the government estimates for the originally contracted work. What this means is that the Navy is getting a lot more work accomplished per dollar and in turn our ships are in a better state of readiness.

Question. We have had complaints from the ship repair industry that the specifications used to scope the work for fixed-price contracts are incomplete, lacking in clarity and fail to consider possible problems found after repair work is begun. Would not this allegation go a long way towards explaining the large contract cost increases resulting from new work?

Answer. 43 per cent of contract price increases in fixed-price contracts is for new work, not a part of or extension of work in the orginal work package. The remainder of cost increases is due to growth in scope of work in the original work package. Growth in scope is common because we do not have the opportunity, due to operational requirements, to dismantle equipment scheduled for repairs to the extent necessary to determine every detail of repair work required. The specifications, therefore, may not always perfectly describe the work to be accomplished. The specifications are generally well written, based on the best information available. They are continuously reviewed and updated before contract award and the language is improved for future application.

In cost-type contracts, the customer bears the risk and the contractor is less critical of the specifications, because he will be reimbursed for actual costs plus his fee or profit for the work in the original contract. Any increase in work scope identified after contract award will be reimbursed on the same basis.

Secondly, it is of interest to note that we pay more for the initial award price for cost-type contracts than for fixed-priced contracts in comparison to the government estimate. The average award price for the 75 fixed-priced contracts, identified in the GAO report, was 77.5 percent of the government estimate while the 30 cost-type contracts were awarded at an average of 87.5 percent of the government estimate.

Question. If the Navy is unable to provide specifications which are accurate and specific enough to define all possible problems associated with a ship repair project, why wouldn't it be possible to go to a combination of fixed-price and cost-type contracts? Under this arrangement, the known repair problems would be awarded through a fixed-price type contract, while the deficiencies detected during the overhaul, and not covered under the contract, would be covered by a cost-type contract. What are the pros and cons of this method of contracting?

Answer. The Navy does award repair work on a fixed-price basis and does negotiate "specification deficiencies" based on cost/price analysis. Whether the deficiencies are contracted for under the Changes Clause of the fixed-price contract or separate cost-type contracts are executed, both methods require sole source negotiation of cost/price elements associated with the additional work requirements.

Question. What is the Navy doing to hold down these cost increases?

Answer. Several initiatives have been taken to hold down cost increases. One of the most significant initiatives is to defer growth in scope of work identified during overhaul if: (1) an acceptable price cannot be negotiated with the contractor; (2) the work will not impact significantly on the outcome of the overhaul. A separate maintenance availability will be established and the deferred work will be competitively awarded using fixed-price contracts to obtain the least cost to the Navy.

Secondly, the work specifications will contain a requirement for the contractors to reserve a specific number of man-days of trade skills, priced as part of the contract, to accomplish growth work identified during the conduct of the overhauls.

The language within the repair specifications is under continuous review to strengthen definitions ofwork to reduce instances of misunderstanding, or disagreement as to the scope of work.

Question. What impact will this have on the industry?

Answer. None. Additional business opportunities will be made available to the industry to compete for work that is deferred during overhauls.

DEFINING SHIP MAINTENANCE BY NATURE OF WORK

Question. In their report accompanying the FY 86 Appropriations Bill, the Senate Appropriations Committee recommended that the Navy select its contracting procedures for ship repair based on the nature of the work to be performed. Under this concept, the question of shipyard duration should not determine if work is an overhaul or an SRA.

Do you see any merit in the Senate's recommendation that SRAs be limited only to emergency repair work or installation of standard alterations?

Answer. The Navy has engineered maintenance concepts that include requirements for both SRAs and overhauls. SRAs are scheduled, short, labor intense availabilities based on sound engineering maintenance principles designed to accomplish specific repairs and alterations. Conversely, emergency repairs are accomplished by a different type of availability called a restricted availability or technical availability (RA/TA). RA/TA's are scheduled to accomplish voyage or emergency repairs required to maintain a ship's readiness to carry out her mission.

We have increased the interval between overhauls of both submarines and surface ships to use engineered maintenance strategies and reduce cost. Selected restricted availabilities are an integral part of that strategy and are interspersed between overhauls to allow for some planned maintenance between the longer, more costly overhauls, some including dry-docking. They are intended to correct emergent deficiencies, and perform planned maintenance to maintain a high level of readiness. This strategy allows us to increase our number of operational ship days and therefore increase overall availability and fleet readiness.

Question. If implemented, would this redefinition alter the Navy's position concerning homeporting of repair work?

Answer. Restricted availabilities are scheduled to conduct emergency or voyage repairs as they occur. Their purpose is to repair inoperative equipment that would adversely impact on the ship's mission or present major safety concerns to shipboard personnel. The nature of emergent repair work does not lend itself to homeport policy.

Question. Could this redefinition help reduce the increase in growth in ship work packages as inferred by the Senate report?

Answer. No. Depot maintenance work packages are made up by predicting the material conditions of a piece of equipment. As pieces of machinery are opened to begin repairs, additional work or replacement parts are often required which increases cost. As an initiative to limit cost in growth in ship work packages, we have developed a new policy clause that states, "whenever new work is required by the government, the contractor will be afforded the opportunity to submit a proposal to accomplish the work." The contractor and the contracting officer shall negotiate the scope of the effort. If a fair and reasonable target price cannot be reached, the contracting officer reserves the right to:

a. Have the work done by the government;

b. Compete the work for accomplishment by a third party contractor at the overhaul site concurrent with the contractor's continued performance; or

c. Defer the work to a designated post-overhaul repair period which will be the subject of a separate competitive procurement. It is anticipated that this special clause will place the Navy in a significantly better negotiating position and reduce the prime contractor's leverage to dictate price in new and growth work.

SHIP MAINTENANCE/MODERNIZATION WORKLOAD

Question. Please provide for the record a table for each of fiscal years 1985, 1986 and 1987, for each overhaul, the following data broken out and summarized by general purpose forces or strategic forces; active or reserve; and whether work is intended for public or private yards or competition: name of ship and hull number, planned duration, homeport, industrial activity, repair costs, alteration costs, and total costs.

Please provide for the record a table for each of fiscal years 1985, 1986, and 1987, for each SRA, the following data broken out and summarized by general purpose forces or strategic forces; active or reserve; and whether work is intended for public or private yards or competition: name of ship and hull number, planned duration, homeport, industrial activity repair costs, alteration costs, and total costs.

Please provide for the record a table for each of fiscal years 1985, 1986 and 1987, for each PM, the following data broken out and summarized by general purpos forces or strategic forces; active or reserve; and whether work is intended for public or private yards or competition: name of ship and hull number, planned duration, homeport, industrial activity repair costs, alteration costs, and total costs.

Answer. The records requested for overhauls, SRA's and PAM's for FY85, 86 and 87 are being compiled from information being provided by field activities and will be submitted on 14 June 1986.

[CLERK'S NOTE.—The Department did not provide the requested information in time to be printed in this hearing volume. However, they did provide preliminary information on this subject, which is printed with the hearing on Operation and Maintenance, Navy. See page 477 of Part 7.]

SHOCK TESTING

Question. Shock testing improves the ability to accurately assess mission capability. Shock testing the first ship of a class, however, offers the best opportunity for improving mission capability at the earliest time and at the lowest cost.

In addition to shock testing the first ship of each class, the Navy should consider the advantages of shock testing all combat ships while still within the SCN envelope. Test preparations for a "shoot and see" type test are not excessive and post-test repairs should not be a factor provided shock hardening modifications identified by earlier tests are effective. Such shock testing would serve as a final quality control. The knowledge that each ship will be shock tested would provide contractors additional incentive for ensuring quality in design and workmanship.

For FY86 and 87, please identify the ship(s) planned for shock testing and the related preparation and repair costs.

Answer. No ship shock tests are scheduled in FY86. Three ships are planned for testing in FY87. Test preparation and ship repair cost estimates are:

[In millions]

Ship	Preparations [1]	Repairs
CG 53	$26.0	$4.0
CVN 71	26.7	[2] 18.0
FFG 59	3.5	1.5

[1] Includes all test costs except repairs.
[2] Budgeted amount is $3.1M less than current repairs estimate of $21.1M.

Question. Inasmuch as the testing costs do not seem unusually high when related to the total ship construction cost, what consideration, if any, has been given to shock testing each combatant ship of a class or perhaps a representative sample of such ships of a class?

Answer. Performance of low-level shock tests as a periodic in-service requirement is being considered by the Navy. Procedures for performing such tests will be evaluated during the next three ship shock tests. Ship shock test procedures are described in the Test Plan for Routine Shock Testing of Ships (U), NAVSEA 0908-LP-000-0010 of January 1977. This document is currently being revised and will include procedures for such testing. The extent to which such testing will be applied will be dependent upon cost considerations; the technical merits of such testing is not questioned.

Question. Navy policy regarding the selection of ships to be tested was changed in 1980. Before 1980 the Navy required shock testing in the first ship of a class. Current Navy policy requires shock testing an "early combatant ship/craft of a class." Although the current policy has been applied to the recent nuclear cruisers and carrier classes, the first ship in each of these classes was under construction before 1980.

The Navy plans the first shock test of nuclear carrier, the Roosevelt, in November 1987, based on a ship delivery date of December 1986. The Roosevelt (CVN 71-Nimitz class) is the fourth ship in its class; it is the sixth nuclear carrier.

Please explain the reasons for changing shock test requirements from "the first ship of a class" to "an early ship of a class." What are the practical benefits—both military and economic—from following such a policy?

Answer. The practical benefits of following this policy are:

(1) Lead ship post-delivery trial schedules are typically very tight; addition of a ship shock test that may require up to three months to perform (including pre-test preparations and post-test recovery periods) can pose additional and possibly severe scheduling problems. In such cases, shock testing of the second ship instead of the first of the class eliminates the lead ship trials scheduling problem.

(2) In some cases, the second ship (or other early ship) of a class may be more representative of the following ships, owing to modifications made to improve performance based upon lessons learned from the lead ship. Testing of a ship other than the lead ship may thus produce results having broader applicability than would be the case if the lead ship were tested.

The principal problem with testing any but the lead ship is that lessons learned from the test often cannot be applied efficiently to earlier ships of the class. This problem is recognized by the Navy and has led to scheduling of the lead ship for testing whenever practical.

Question. When additional shock hardening requirements are identified from shock testing ships which are not the first ship of a class, what is Navy policy on incorporating these requirements in earlier ships of that class?

Answer. Policy in this area is conveyed by OPNAVINST C9072.1 (para. 6.b), which states: ". . . It is intended that all shock hardening modifications, including those to GFE, be accomplished on a class-wide basis while the affected ships are within the SCN funding envelope. In cases where the affected ships are outside the SCN envelope, and in cases where lead time to develop improved designs prevents accomplishment of a corrective action prior to the end of the SCN period, corrective action requirements shall be identified for accomplishment under the Fleet Modernization Program. Resulting Title D and Title K alteration shall be budgeted for in accordance with current procedures."

Question. The Kennedy underwent a shock test, less severe than the Arkansas, August 1984. The severity of the Arkansas shock test is the level considered the most appropriate for validating shock hardening criteria and identifying additional shock hardening requirements. The shock test manager stated that the factors that affected the decision to not conduct a more severe test for the Kennedy included:

limited O&M funds for repairs,

the Kennedy was the only ship in the class,

the Kennedy was the last conventional carrier, and the Kennedy was not built to the same shock requirements as the nuclear carriers.

The shock test planned for the Roosevelt is of the same severity as that conducted on the Arkansas.

Are all ships and equipments tested to the same criteria? If not, please explain why variations are introduced?

Answer. All modern warships have been designed to resist the same level of shock. However, the technical quality of the Navy's shock hardening procedures has gradually improved due primarily to: (1) improved capabilities to perform pre-acceptance shock tests of mission essential equipment, (2) various improvements in shock analysis techniques, (3) modification of hardening procedures to reflect lessons learned from ship shock tests, and (4) various improvements in implementing policy directives. Because of these factors, and because of factors related to aging, newer ships can be expected to out-perform older ships from a shock standpoint.

Ship shock tests are normally conducted at the same level as the Arkansas shock test. When lower test levels have been permitted, the driving factors have been cost reduction and/or scheduling considerations. Both of these factors applied to Kennedy; relative to scheduling, it was essential to minimize risk that shock test damage to Kennedy would cause extension of her overhaul/delay of her deployment. The Kennedy shock test was successful in that it has provided a greatly improved technical basis for shock hardening of Kennedy and particularly for planning the forthcoming shock test of Roosevelt.

[CLERK'S NOTE.—End of questions submitted for the record.]

Mr. DICKS. The committee will stand in recess until 10:00 on Tuesday. Thank you for your very good testimony.

BLANK PAGE

THURSDAY, APRIL 24, 1986.

NAVY ANTISUBMARINE WARFARE RESEARCH, DEVELOPMENT, TEST AND EVALUATION PROGRAMS

WITNESSES

VICE ADM. JAMES R. HOGG, DIRECTOR (NAVAL WARFARE), OFFICE OF THE CHIEF OF NAVAL OPERATIONS

REAR ADM. DANIEL J. WOLKENSDORFER, DIRECTOR, ASW PLANNING AND WARFARE APPRAISAL, OFFICE OF THE DIRECTOR (NAVAL WARFARE)

JOHN KEANE, DIRECTOR, SUBMARINE ASW, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, ENGINEERING AND SYSTEMS

REAR ADM. VIRGIL L. HILL, DIRECTOR, ATTACK SUBMARINE DIVISION, OFFICE OF THE DEPUTY CHIEF OF NAVAL OPERATIONS (SUBMARINE WARFARE)

INTRODUCTORY REMARKS

Mr. CHAPPELL. Pursuant to a motion duly made and passed, the committee will meet in executive session due to the classified nature of the material being discussed.

At this session, the committee will receive testimony on the Navy's Anti-Submarine Warfare (ASW) research and development programs. The ASW mission area has been described by the Navy as "one of the jewels in our crown". The Navy has budgeted or spent more than $15 billion in ASW research and development since improvements in the Soviet threat were estimated three years ago. This has comprised approximately 60 percent of all Navy R&D funding for the past three years. Despite this investment, however, the Soviet Union continues to seriously erode the U.S.'s advantage in submarine detection.

Because of the significance of this mission, the declining U.S. advantage, and the large increases in funding over a short time period, the committee wishes to review the progress made in this area, the adequacy of planning for the ASW program, and funding priorities for the future. Prior to the discussion of the planning process, the committee will hear a brief description of the Soviet ASW threat.

The principal witnesses today are Vice Admiral James R. Hogg, Director of Naval Warfare for the Chief of Naval Operations; Rear Admiral Daniel J. Wolkensdorfer, Director of ASW planning and warfare appraisal in Admiral Hogg's office; and John Keane, Director of ASW for the Assistant Secretary of the Navy for Research, Engineering and Systems.

Gentleman, the committee welcomes you here today. Your prepared statement will be placed into the record at this point. Admiral Hogg, if you would like to make any brief introductory comments, please proceed.

Opening Remarks of Admiral Hogg

Admiral Hogg. Thank you, Mr. Chairman, and committee members.

It is a pleasure to be here with you today with this opportunity to present what we see as the ASW challenge the Navy faces and how we intend to meet it. In addition to Admiral Wolkensdorfer and Mr. Keane, I have backup witnesses so that we can answer any specific questions you might have in their areas of responsibility. They include Rear Admiral Brickell, OP-098, Rear Admiral Hill, OP-02, Captain Cepek, OP-303, and Mr. Golart from the Naval Air Systems Command.

ASW is clearly the Navy's number one warfighting priority because of the severe national security consequences if we lose that warfighting edge over the Soviets.

As I am sure you know, in 1984 there was a turning point in ASW because of a series of threat reviews ———, and of course we will go into this in more detail later in the hearing.

This raised concern for the projected relative capability of our ASW forces against Soviet submarine forces, looking ahead into the 1990s and into the 21st Century. I use the term "relative" in this context, and that is very important since the execution of the maritime strategy depends upon our qualitative warfighting advantage over the Soviets. ———.

There is another aspect of warfighting that becomes critical when we talk about the order of battle disadvantage that we have and that is the increased ASW effectiveness that we gain by closely coordinating the use of all of our ASW forces.

We do this very well in the fleets with significant synergistic enhancement. I am speaking of aircraft and ships in battle groups and battle forces ———.

Our P-3 aircraft and SSNs operate in a coordinated manner in what we call forward area ASW. In that regard, I would like to say that the SSN is without question the finest ASW asset that we have and development of the SSN-21 on schedule is really essential to our maintaining the advantage that we have over the Soviets.

From another viewpoint, we recognize that ———. If we pursue these techniques with determination, if we then adjust our ASW programs accordingly and in the interim if we maintain the momentum that we now have in our ongoing programs, we will maintain the advantage that we need.

Admiral Wolkensdorfer will cover the Soviet threat and our approach to countering that threat.

SOVIET THREAT

Admiral Wolkensdorfer. Good afternoon, Mr. Chairman and gentlemen. I will present an overview of the threat that the Soviet submarine force presents to the United States. I will start by describing the submarine missions that the Soviets have, the numbers of submarines that they have now and projected into the future, where they fit into the Soviet strategy and finally, a qualitative assessment of how well they are able to support that strategy.

The first mission is the strategic mission, the ICBM mission, as typified by their latest submarine, the TYPHOON. This is the largest submarine in the world. It is half again as large as our OHIO class. It carries 20 intercontinental ballistic missiles, and is a very quiet submarine. They have four of these in their inventory.

The second principal mission is the cruise missile anti-battle force mission, as typified by the OSCAR class submarine which carries 24 cruise missiles allowing it to stand off at about 250 miles from the force, and fire ——— these new class submarines are in the inventory at this time.

The third mission is the standard and classic torpedo attack submarine. In the case of the Soviets, however, they use it slightly differently and as more of a general purpose submarine than we do ———.

[CLERK'S NOTE.—The balance of Admiral Wolkendorfer's presentation and the slides he used were classified and have been deleted.]

Admiral **WOLKENSDORFER.** Admiral Hogg pointed out that these concepts really require early focus on R&D, and we are in the process of doing that now.

The summary is that there are major challenges in the future, and that it requires redirection. We are making that course change now.

ACTIVE SONAR

Mr. **CHAPPELL.** Admiral, on your active sonar ———.

[CLERK'S NOTE.—Classified discussion removed.]

SOVIET PROGRESS

Mr. **CHAPPELL.** I understood you to say that we hold the lead on the Soviets. Do you expect that to remain fairly constant, or do you think they are going to gain on us between now and the year 2000?

Admiral **HOGG.** I feel the Soviets have made a lot of progress in the past ten years, because they have had a long way to go.

[CLERK'S NOTE.—Classified discussion removed.]

CHANGES IN ASW STRATEGY

Mr. **CHAPPELL.** The CNO made a statement that it is time for us to change to some significant new investments in ASW, a change in direction. What is that major shift he is talking about?

Admiral **HOGG.** That is essentially what we are doing now.

Mr. **CHAPPELL.** Is that what you are talking about here ———?

Admiral **HOGG.** Yes, sir. Those two, and there are some questions involved in terms of propagation phenomenology. We need to really bring those out very carefully through an at-sea testing program, which is funded now for the next several years.

That will put additional monies ———.

When we throw out those terms we are really talking concepts more than programs. We don't have programs established yet ———. In the sense that you would consider a program here, with a program element fully funded and past Milestone 2, that is.

TORPEDO PROGRAMS

Mr. CHAPPELL. What is the status of our torpedo programs? Do we have any deficiencies at this time?

Admiral HOGG. I will talk in general terms. It looks good. We have the Mark 48 advanced capability torpedo coming along. We have the Mark 50 advanced light-weight torpedo, and there is a significant amount of basic research going on to even improve those ———. So those programs are in good shape.

Mr. CHAPPELL. Are those the primary programs for our attack submarines?

Admiral HOGG. The Mark 48, yes, sir. The Mark 50 is air-launched and surface-launched.

Mr. CHAPPELL. What range and speed are we talking about with torpedos, and how well are we able to meet the threat now?

Admiral HILL. I think the Mark 48 is without doubt the finest torpedo in the world. We need the torpedo coming on line as we speak to conduct OPEVAL. This torpedo takes us into the next century. The advanced capabilities that the ADCAP torpedo gives us are significant ———.

So it is a significant improvement over the torpedo that we have, but the torpedo that we have is finer than anything else that is available today.

Mr. CHAPPELL. Are we reacting fast enough with that torpedo program to meet the threats? Seems like you are not going to really go into your investment strategy too well before 1986, are you?

Admiral HOGG. I believe it fits in with our torpedo program, sir.

ASW PRIORITIES

Mr. CHAPPELL. What are your priorities now? What is your highest priority for ASW?

Admiral HOGG. We are still coming to grips with the investment strategy that we talked about. In order to really finalize it we need to decide the direction we are going to go ———.

So I really cannot answer that question with any level of confidence that what I am saying will be the same answer that I would give you three to six months from now or a year from now.

Mr. CHAPPELL. All right.

Admiral HOGG. I could say that what we are—our priority is to continue our current ASW-R&D procurement programs ———.

At the same time we need to go into a major effort; first testing, then R&D effort to develop these two different approaches to submarine detection so that ———.

That will carry us into the 21st Century.

Mr. CHAPPELL. Well, are you really satisfied with the progress you were making here between 1983 and 1986? You virtually doubled your RDT&E funding from about $3.2 to $6.1 billion. Yet many think the progress has been bleak. Are you satisfied with the progress?

Admiral HOGG. I would like to have those kinds of figures in R&D for ASW, but I really cannot find them, Mr. Chairman. The data I have says that we in 1986 have $1.44 billion in ASW R&D and that includes the money going into the SSN-21.

We are, out of a total R&D program of $10 billion this year for the Navy, we are 14 percent of it, $1.44 billion.

Mr. Chappell. Mr. McDade.

Mr. McDade. Thank you, Mr. Chairman.

NON-ACOUSTIC ASW

Admiral, the non-acoustic ASW, as you know, involves the surveillance of ——— non-acoustic signatures in order to detect and classify hostile submarines. The Navy is budgeting $26 million for research in this area in fiscal year 1987.

Last summer, an analyst at the Center for Naval Analyses stated ———.

[Clerk's note.—Classified discussion removed.]

Mr. McDade. Thank you, Mr. Chairman.

Mr. Chappell. Mr. Dicks.

SOVIET DEPLOYMENT OF SUBMARINES

Mr. Dicks. I regret that I couldn't be here for your presentation, Admiral.

You testified that the Soviets, as a result of the analogous response by Mr. Andropov to Pershing II and GLCM, had begun to deploy their submarines closer to shore once more. Our official reaction at the time was one of minimal concern.

I take it from your statement that you are in fact concerned?

Admiral Hogg. In the overall context of a global conflict and the maritime strategy, it is to our advantage ———.

[Clerk's note.—Classified discussion removed.]

Classification of Submarines

Mr. Dicks. Mr. AuCoin asked me if I would ask a question on his behalf. He is concerned about being able to detect between various classes of submarines and friend or foe.

Is that a problem, identifying, say, Soviet submarines versus British or French submarines?

Admiral Hogg. ———.

[Clerk's note.—Classified discussion removed.]

Mr. Dicks. I ask unanimous consent to put Mr. AuCoin's questions in the record for further amplification.

Mr. Chappell. Without objection.

[Clerk's note.—Questions submitted by Mr. AuCoin and the answers thereto follow:]

Question. Suppose you were in a war right now, you picked up an underwater contact and set out to sink it. How do you know you wouldn't be attacking an American submarine, or a British or French submarine?

Answer. ———.

Question. Would you require that we had identification of the submarine's nationality before attacking?

Answer. ———.

Question. Can you identify nationality without identifying ship class, or does it work in reverse? That is, would you know this ship sounds Russian, and it's probably an Alfa-class, or would you know this ship sounds like an Alfa, therefore it must be Soviet?

Answer. ———.

Question. For example, if you were attacking a Victor 3, you'd know it was a Victor 3 and not a Yankee or a Delta?

Answer. ———.

[Clerk's note.—End of questions submitted by Mr. AuCoin.]

Mr. Chappell. Mr. Young?

ASW TACTICS

Mr. Young. I would like to get something correct in my own mind. It seems to me last year that the Soviets broke out quite a few ships and submarines into the North Sea ———?

Admiral Hogg. ———. Yes.

Mr. Young. In view of that, have we had to change any tactics or any of our ASW programs to deal with something like that happening in a possible operational situation?

Admiral Hogg. ———.

Mr. Young. Do we address that problem in this budget for fiscal year 1987?

Admiral Hogg. Yes, sir.

Mr. Young. Will it help?

Admiral Hogg. Yes ——— yes, sir.

SOVIET ESPIONAGE

Mr. Young. You mentioned earlier the fact that the Soviets have made some strides or some advances ———. How much of this would you relate to their ability to conduct espionage? I am talking about the Walker case, for example, and any others that you might be aware of. How much have they gained because of their ability to steal information from us?

Admiral Hogg. We haven't really pinned down the specifics in the Walker case. One reason is that we haven't pressed him too hard yet becase of the special circumstance we have placed on him until the Whitworth case is completed. ———.

[Clerk's note.—Classified discussion on this and on Arctic Operations removed.]

GRAMM-RUDMAN-HOLLINGS IMPACT

Mr. Young. Have you had to stand down any major effort this year because of Gramm-Rudman-Hollings?

Admiral Hogg. Gramm-Rudman didn't require a major standdown in fiscal year 1986. The great concern, of course, is what will happen in 1987 and beyond.

Mr. Young. Is the potential there for some serious problems?

Admiral Hogg. Yes, sir.

Mr. Young. In your particular programs?

Admiral Hogg. Yes, across the board. We are not being selective. We have looked at certain programs that are essential programs, but nothing will be sacred if the rules are applied the way it appears they would be applied.

Mr. **Young**. I appreciate your responses.

Thank you, Mr. Chairman.

Mr. **Chappell**. Mr. Miller.

U.S./NATO INVENTORY

Mr. **Miller**. Thank you, Mr. Chairman.

Admiral, you mentioned in your statement that the Soviets have ——— submarines, as I understand it. Could you get the total the United States has? Undoubtedly, that has been in the record before, but since we are talking about numbers now, can you give the United States total?

Admiral **Hogg**. Yes, sir. To make sure we are exactly accurate, I will ask a submarine officer to answer the question.

Admiral **Hill**. To date we have 95 SSNs and four SS diesel type submarines. I don't have the exact number of ballistic missile submarines today.

Admiral **Hogg**. What is authorized, 47?

Admiral **Hill**. I think it is 37.

Admiral **Hogg**. We will say 37 and double check that, and if that is not correct, we will correct it for the record.

[The information follows:]

To date we have 97 SSNs, four SS diesel type submarines, and ——— ballistic missile submarines.

Mr. **Miller**. One hundred and thirty-six you are saying ———.

If we added the NATO submarines on the 136, where would we be? Would we be comparable to the Soviet submarines ———?

Admiral **Hill**. A lot closer. Our NATO allies have on the order of 150 diesel, another 25 or so attack submarines. I would have to check the numbers precisely, but it is on the order of 175 submarines. That is not just NATO. I am counting the Australians and some of our Southeast Asian allies.

[The information follows:]

[**Clerk's note**.—Classified insert removed.]

SOVIET DEPLOYMENTS

Mr. **Miller**. You mentioned or at least we saw the location where the Soviets are operating their submarines, in the Atlantic, the Pacific, the Indian Ocean and the like.

Do you find that they are like homing pigeons? Do they stay close to their home port and not move from one ocean to the other?

Once you get a signature on a submarine and pretty well know what it is all about, do you find that animal showing up someplace thousands of miles away?

Admiral **Hogg**. ———.

[**Clerk's note**.—Classified discussion removed.]

CAPTOR UPGRADE

Mr. **Miller**. One other thing. I notice that you speak of mines and new initiatives including a CAPTOR upgrade.

Admiral **Hogg**. Yes, sir.

Mr. **Miller**. Do we have R&D going on that CAPTOR upgrade at the present time?

Admiral **Hogg**. I don't know that there is a program element line. I would expect there is basic research going on in the laboratories.

We are talking about an upgrade ———.

[Clerk's note.—Classified discussion removed.]

Mr. **Miller**. Very good.

I have, Mr. Chairman, some additional questions that I would present for the record.

If you will answer those, I would appreciate it.

Admiral **Hogg**. Yes, sir.

[Clerk's note.—Questions submitted by Mr. Miller and the answers thereto follow:]

Question. Admiral Baggett appeared before the Senate Armed Services Committee several weeks ago and expressed concern about the need to correct ordnance deficiencies. The Navy is substantially short of its authorized inventory objective for CAPTOR and cannot meet the requirements identified by the CINC's for the Atlantic and Pacific. What alternatives are available to the Navy to accommodate these requirements if the CAPTOR production line is allowed to terminate?

Answer. Any operational commander always feels that he can use more. When I was out in Seventh Fleet I had plans ———, if I had used them in every area for which I had a plan. But of course, all the operations plans are not intended to be executed concurrently. To date ——— CAPTOR mines are built or are being built ———. If the production line terminates, this secondary role can be met with existing ASW forces including surface ships, submarines, and ASW aircraft.

Question. For the past several years the Navy has conducted special testing of the CAPTOR mine in an expanded operational environment. What is the status of these tests and when will the Navy have the results to discern if additional mines would be useful ———?

Answer. The following CAPTOR ——— tests have been conducted: ———.

MINING CAPABILITY

Question. Admiral Wes McDonald, who just retired as CINCLANT, recently expressed concern about the Navy's and NATO mining capabilities in the October issue of *Naval Proceedings.* He maintains that "mining is one of the most affordable of naval capabilities." Yet we are repeatedly told that the Navy needs more CAPTOR mines but cannot afford them. What are your thoughts about this?

Answer. As I have said previously, any operational commander always feels that he can use more. I feel that our inventory today, however, is adequate. ———. This secondary role can be fulfilled using other existing ASW forces. While it certainly may be desirable to have enough CAPTOR's to meet all operation plans concurrently, this is unlikely to occur in the reality of fiscal constraint.

Of equal importance to inventory levels, we must dedicate the funds needed to upgrade existing CAPTOR's to remain current with the threat. This challenge is critically important in view of the recent advancements the Soviets have made in producing fast, deep diving, ——— submarines.

[CLERK'S NOTE.—End of questions submitted by Mr. Miller.]

Mr. CHAPPELL. Please answer the remaining committee questions for the record.

[CLERK'S NOTE.—Questions submitted for the record and the answers thereto follow:]

U.S. LEAD IN SUBMARINE DETECTION CAPABILITY

Question. A few years ago, the U.S. was believed to lead the Soviets in submarine detection technology by up to 15 years. In 1983, that estimate was revised downward to 10 years. Now the Supreme Allied Commander for the Atlantic Fleet, Admiral Lee Baggett, describes the U.S. lead as 3-4 years at a maximum. Would you agree with Admiral Baggett that the recent Soviet submarine advances may have reached the point where they could enable the Soviets to win a conventional war in Europe?

Answer. ———.

Question. Submarine acoustics is in large part dominated by computer technology. Yet, we hear that the Soviets are still well behind us in computer development. How, then, have the Soviets gained so rapidly in ASW?

Answer. ———.

CNO POLICY STATEMENT

Question. In September 1984, the CNO made the following statement concerning U.S. investment in ASW:

"It is now time for a major shift in Navy's approach to ASW . . . our future ASW posture will be inadequate to . . . maintain national security unless extraordinary steps are taken in the near term."

What "major shift" was made in the Navy's approach to ASW? What "extraordinary steps" were taken?

Answer. ———.

CNO URGENT R&D PROGRAM (CUARP)

Question. The Navy has recently initiated the "CNO's Urgent ASW Research Program." Would you explain what this includes and describe how it relates to the Soviet ASW threat? Are technology base ASW needs being included in the ASW Master Plan and Investment Strategy? If not, why?

Answer. The CNO Urgent R&D Program ———. Technology base ASW needs are being included in the ASW Master Plan and Investment Strategy.

ASW MASTER PLAN AND INVESTMENT STRATEGY

Question. ———. This led to an acceleration of U.S. budget resources to counter that threat. However, the Navy's ASW Master Plan and Investment Strategy, which would provide for a systematic appraisal of alternatives and competing priorities, will not be completed until December 1986, more than four years after the increased threats were discovered. Why has it taken the Navy four years to develop and finalize a plan to address this threat?

Answer. Anticipated improvements in Soviet submarines were noted ———.

The framework for this study is the ASW Master Planning Process. This dynamic effort began with the formulation of an ASW Warfighting Strategy completed and approved in 1985. This strategy is a coherent plan which supports the overall Maritime Strategy and is coupled with R&D in order to ensure its executability into the 21st century. This effort identified the key operational requirements and critical technologies which are needed to maintain qualitative superiority. Concurrent with the Warfighting Strategy, another in-depth and issue oriented analysis was conducted—the annual Task Appraisal in support of the Navy's POM-87 development. That analysis, completed in December 1984, took a twenty year look into the future to be consistent with and support the evolving ASW Warfighting Strategy. The annual Task Appraisal is the vehicle which provides an annual update to our analysis, ensuring that our planning process is responsive to the evolving threat. The Task Appraisal for POM-88, completed in December 1985, continued the analysis of the increasingly sophisticated threat.

Through the ASW Master Strategy we have identified new alternative system concepts that if introduced in conjunction with certain of the systems we currently plan to have, offer clear potential to support our Maritime Strategy ———.

Several of the concepts identified by the Master Strategy are already in development, However, the completion of a comprehensive ASW Master Plan will ensure that the ASW program requirements identified by the strategy and appraisal efforts are effectively and efficiently implemented. To summarize ——— we initiated a long comprehensive plan to ensure our superiority into the 21st century. The development of that plan started with the ASW Warfighting Strategy, evolved through a series of efforts including the annual ASW Task Appraisal, the ASW Master Strategy, and the current effort on the Investment Strategy. Although the final programmatic Master Plan will not be completed until the Spring of 1987, its development has been concurrent and interactive with the Navy POM development to identify near and far term potential solutions to address the threat.

Question. Most of the Navy's major ASW programs to counter the year 2000 threat, including the SSN-21 and the ALWT and Mark 48 ADCAP torpedoes are already well into development, and in some cases have already entered production. Given this, what use will ASW Master Plan and Investment Strategy have?

Answer. The ASW Master Plan and Investment Study are dynamic processes that are designed with flexibility to meet the evolving threat. The planning process is cyclical with a positive feedback loop provided by the annual ASW Task Appraisal, ensuring continual refinement of the Warfighting Strategy, Master Strategy, and Investment Study. Sensors, platforms, and weapons in development now are needed to counter the present threat and the anticipated threat in the next decade. They will continue to be effective against a large percentage of the Soviet submarine force into the next century. The continual refinement of the Master Plan will ensure that necessary improvements to those sensors, platforms, and weapons will be executed as the threat continues to evolve.

ASW PRIORITIES

Question. In an era of tight budgets as we see today, the Congress will be able to fund only those programs which have the highest priority. The "major shift" in ASW would indicate that some technology efforts would be de-emphasized. What programs fit into this category?

Answer. ———.

PAYOFF FROM U.S. ASW INVESTMENT

Question. The Navy increased its RDT&E funding for ASW from $3.2 billion in FY 1983 to $6.1 billion in FY 1986, a substantial increase in only 3 years. Yet in that time period, our assessments of the U.S. Soviet ASW balance have been progressively more bleak. Why haven't we been able to affect this gap positively since 1983?

Answer. Our figures for expenditures for R&D in ASW indicate that $1.44B was dedicated to ASW R&D in FY-86 and $1.98B in FY-87, representing 10.0% and 10.6% of the Navy R&D budget in FY-86 and 87, respectively. We have seen a very definite payoff from these expenditures in the broadening of our technology base and in exploratory development of new concepts. ———.

WARGAME RESULTS

[Classified questions and answers removed.]

ALLIED CONTRIBUTION

Question. The number of Soviet submarines is much greater than the number of submarines in the U.S. inventory. However, when the current production rates of all NATO and Warsaw Pact forces are compared, the warfighting assets appear much more balanced. Do the Navy's wargame results assume any mobilization of NATO submarine forces?

Answer. Yes, we assume mobilization of NATO submarine forces. The emergence of the Soviet Union as a long-range, multi-mission seapower has heightened the significant maritime challenges facing NATO. NATO remains committed to strategy of maritime forward defense which hinges on control ———. This was taken into account in the wargames.

Question. Isn't it likely that the NATO allies would be involved, particularly in a North Atlantic campaign between U.S. and Soviet forces?

Answer. Yes, sir. More specifically, under Article 5 of the North Atlantic Treaty "an armed attack against one or more of the parties . . . shall be considered an attack against them all." During a period of major East-West crisis we expect our NATO allies to increase their readiness and, in accordance with plans, ———.

Question. Is NATO developing a single plan which provides a coordinated response? If not, why not?

Answer. NATO's plan for a coordinated response, *The Concept of Maritime Operations,* is a broad statement approved by the three major NATO commanders, addressing how allied maritime forces may be used ———. This 1982 document forms the basis for NATO forces requirements, maritime plans, operations orders, command and control and other supporting documents.

Question. Have the allies noticeably increased their investment in ASW since 1983? How have the British and French responded to the Soviet advances in this area?

Answer. NATO is making improvements in a number of long-term ASW modernization programs ———.

ARCTIC RESEARCH

Question. Arctic research is extremely important ———. The President's budget shows a decrease in federal support for Arctic research in FY 1987, including no growth in the DOD funding portion. Why is that?

Answer. The only Navy funding in Table K–4 of Special Analysis K of the President's FY 1987 Budget is $7.0M of basic research (6.1) funding administered by the Office of Naval Research. Table K–4 does not reflect a planned FY 1987 obligation of $68.9M in R&D support for the Navy's Arctic Warfare Program in categories other than basic research. Security classification of the details precluded their incorporation in the unclassified report of the Interagency Arctic Research Policy Committee, from which the Table K–4 funding numbers were derived. The Navy shares HAC's view that Arctic research is vital ———.

Question. For the record, provide a breakdown of row one of the FY 1987 column of Table K–4 in Special Analysis K of the President's FY 1987 Budget by budget program element, showing P.E. number and name and amount of funding.

Answer. The Office of Naval Research administers only $7.0M of the total $26.278M shown in Table K–4.

Program Element: 61153N.
Title: Defense Research Sciences.
Project: Arctic Environment Support.
Subproject: Arctic Acoustics and Oceanography, $6.6M.
Subproject: Heavy Weather at Sea, $0.4M.
Total, $7.0M.

The remaining $19.278M are administered by agencies other than the Navy. (The data in Table K–4 were derived from the Interagency Arctic Polar Research Committee report of September 1985, entitled, "Federal Arctic Research.")

NON-ACOUSTIC ASW

Question. Non-acoustic ASW involves the surveillance of emissions, wakes, and other non-acoustic signatures in order to detect and classify hostile submarines. The Navy is budgeting $26 million for research in this area in FY 1987. Should the U.S. be doing more research in this area, as a minimum to counter possible Soviet breakthroughs?

Answer. The Navy has studied, and continues to investigate, possible non-acoustic systems for ASW. Study areas showing promise have been expanded to include in depth research, hardware development and at sea testing. We are actively pursuing phenomena which are estimated to have potential utility from an ASW standpoint. We believe that our non-acoustic ASW program is well balanced and of sufficient scope ———.

Question. Why did the Navy reduce the FY 1987 budget request for non-acoustic ASW from $37 million estimated last year to $26 million today?

Answer. In the current fiscal climate, concerted effort was made to reduce the budget requested while retaining an effective, well organized program. The current request encompasses a sufficiently robust R&D effort to exploit all potential areas for ASW utility.

Question. Provide a brief discussion of the potential benefits from non-acoustic ASW compared to acoustic ASW.

Answer. Improvements in Soviet submarine ——— and acoustic sensor technologies have closed the gap in the traditional acoustic advantage we enjoy over the Soviets. Acoustic sensors still offer the greatest potential to ensure our continued advantage ———.

Question. Describe the in-water test results to date of the ——— weapon, and provide milestones for continuance of that research and development effort. Is the Navy placing a high priority on this work?

Answer. The ———.

SEA LANCE PAYLOADS

[CLERK'S NOTE.—Classified questions and answers removed.]

MANAGEMENT OF ASW TEST RESOURCES

Question. In a recent draft report, the GAO claims that ASW test resources such as range equipment, simulators, and targets, are consistently underfunded since these assets must be procured out of weapon system R&D funding. When a program manager must choose between funding for the weapon system or its related test equipment, higher priority is almost always given to the weapon system.

Do you agree with the GAO?

If so, what needs to be done?

If not, why not?

In particular, do you concur in the GAO suggestion that a separate OPNAV office and project office within NAVSEA should be established to ensure adequate management attention to this area? If not, why not?

Answer. Whenever a new weapon system is being developed, an integral part of that process is the development of a test facility that adequately simulates the operating environment of the weapon and a test target that is representative of the actual target the weapon is designed to counter. The growing sophistication of Soviet submarines with their deep diving., high speed capabilities ——— requires equal sophistication in test facilities and targets. Unfortunately, attaining these levels of sophistication is very expensive. In these fiscally constrained times, if a program manager must choose between funding for the weapon or its related test equipment, the higher priority must go to the weapon. When this occurs, lacking any increase in R&D funding, it is necessary to modify existing facilities and hardware to provide the necessary testing.

A separate OPNAV office and project office within NAVSEA would not necessarily provide relief. Project managers for weapons systems development are in the best position to define testing goals and identify specific testing needs. Creation of a new organization would not necessarily solve a problem which is due in large part to budgeting constraint.

FASTMATT TARGET

[CLERK'S NOTE.—Classified questions and answers removed.]

Question. This effort is being sponsored directly by the Office of the Director, RDT&E (OP-098). Why is FASTMATT accorded such high level attention?

Answer. The FAST/Deep Prototype target is being funded by the Director of Research, Development and Acquisition for two main reasons:

It is strictly a research and development testing target.

OP-098 is an unbiased development agency. The need for target development by such an agency has been expressed by Congress, GAO, and OSD.

INSHORE ASW

Question. The ASW Master Strategy states the following concerning inshore ASW: ———.

Does the U.S. need a stronger capability to conduct shallow water ASW?

Answer. The shallow water environment, whether off our coast or the Soviet Union's, is complex and varies dramatically between geographic locations, and with the seasons in a given location. All of our ASW systems work with varying degrees of success ———.

Question. Does the U.S. lead the Soviet Union in this warfighting capability?

Answer. ———.

Question. Would you agree with the assessment of a draft GAO report that "the Navy's capability to detect and destroy enemy submarines in varied shallow water areas ———?

Answer. We have conducted experiments, exercises, and operations in diverse areas such as the Georges Bank, Gulf of Mexico, Straits of Sicily, Korean Strait, Barents Sea, Baltic Sea and many other shallow water areas throughout the world. ———.

We are working ———. The Oceanographer of the Navy has designated shallow water as a high priority program, and is pressing on with efforts to increase our knowledge of this environment. We have developed a single algorithm (COLOSSUS II) for all shallow water performance prediction systems, which will yield an expanded and standardized data base. This increasing knowledge of this acoustic environment is being applied in the development of our new sensor systems.

Question. What programs does the Navy currently have in R&D which address the shallow water threat?

Answer. The AN/SQS-53C sonar, currently in engineering development, will have improved ———.

Question. How does the Navy simulate Soviet diesel submarines in both fleet training and weapons training? Would this effort be more effective with in-house or leased diesel assets for testing and training?

Answer. We simulate Soviet diesel submarines in our training ———.

Question. What percentage of the Soviet submarine fleet is used for the purpose of coastal or riverine ASW?

Answer. In peacetime almost all Soviet submarines conduct occasional ASW operations in coastal waters. ———.

Question. Does the Soviet warfighting strategy, which places a very high priority on defense of the Soviet landmass, indicate that they place a higher priority on inshore ASW than does the U.S.?

Answer. The Soviets conduct ——— ASW operations off their coasts as a result of the strategic emphasis they place on protection of their homeland and on denying access to ocean areas adjacent to their shores. This ———.

ASW TECHNICAL DIFFICULTIES

[CLERK'S NOTE.—Classified questions and answers removed.]

ASW FUNDING TRENDS

Question. Provide for the record a breakdown of ASW RDT&E funding for fiscal years 1981 through 1988, inclusive, with separate rows for surface, subsurface, and air ASW.

Answer. A breakdown of ASW RDT&E is as follows:

	FY-81	FY-82	FY-83	FY-84	FY-85	FY-86	FY-87	FY-88
Submarine	285.4	456.0	492.1	572.6	636.7	651.3	1,001.6	[Deleted]
Air	196.7	202.7	174.7	162.2	164.2	129.6	226.4	
Surface	180.6	200.2	239.4	268.5	288.8	315.7	348.3	
Surveillance	74.5	62.9	77.0	67.9	54.1	69.8	102.3	
Other	253.0	235.7	253.9	238.3	297.3	275.9	303.6	
Total	990.2	1,157.5	1,237.1	1,309.5	1,441.1	1,442.3	1,982.2	

SOVIET SUBMARINE SHIPBUILDING FORCE LEVEL TRENDS

Question. Provide current NISC estimates of Soviet submarine shipbuilding, by class, through the year 2000. Provide current NISC estimates of Soviet submarine force levels, by class, through the year 2000.

Answer. Projected Soviet submarine force levels, by class, through the year 2000 are shown in Tabs I & II. ———.

[CLERK'S NOTE.—Classified slides removed.]

THE ASW MARKET

Question. Admiral, a recent comprehensive analysis of the FY 1985–89 ASW market conducted by a major marketing research firm advised private industry that the ASW market will grow over that period at an annual rate of 13 percent. This report was based largely on Navy budget documents and interviews with Navy officials. In a zero real growth budget climate, can we realistically expect ASW funding to increase 13 percent each year? Based on such reports, the defense industry might disinvest in some areas in order to shift its assets into ASW. However, if those increases do not materialize, the defense production base in these other areas may suffer. Is the Navy sending and unrealistically optimistic signal to the defense industry concerning ASW funding growth?

Answer. I cannot attest to the validity of the assumptions or the conclusions of a major research firm concerning where private industry is advised to concentrate its efforts. There is some quesiton, also, as to whether the "market growth rate" concluded by the research firm can be equated directly to ASW funding rates. The Navy's figures clearly do not indicate a funding growth rate of 13%. FY–85 to FY–89 ASW TOA is as follows: ———.

ASW is clearly the Navy's number one warfighting priority because of the severe national security consequences if we lose that warfighting edge over the Soviets. The Navy has been very vocal in getting this message across and, no doubt, industry is keenly aware of our position. As you correctly point out, in a zero real growth budget climate, funds may be expected to gravitate away from programs which are evaluated to be lesser utility, in favor of higher payoff programs. Our intention is certainly not to send an unrealistically optimistic signal to the defense industy and I don't believe we have done so. While ASW is clearly one of the Navy's most important concerns, the ASW TOA figures do not indicate the magnitude of growth concluded by the research firm.

[CLERK'S NOTE.—End of questions submitted for the record:]

Mr. CHAPPELL. Thank you very much.

Gentlemen, we thank you very much for being with us.

The committee will stand adjourned until 10:00 Tuesday morning.

THURSDAY, APRIL 24, 1986.

NAVY SUBMARINE/NUCLEAR REACTOR NEEDS

WITNESS

ADM. KINNAIRD R. McKEE, DIRECTOR, NAVAL NUCLEAR PROPULSION PROGRAM, U.S. NAVY

INTRODUCTORY REMARKS

Mr. CHAPPELL. The committee will come to order.

The committee this afternoon will receive testimony on the Navy's future submarine and nuclear reactor requirements. This will include a discussion of the SSN-21 submarine as well as other issues related to naval nuclear propulsion.

The committee welcomes as principal witness Admiral Kinnaird R. McKee, Director of the Naval Nuclear Propulsion program. Admiral McKee succeeded Admiral Hyman G. Rickover, who appeared before this committee many times, in February 1982.

Admiral McKee, your prepared statement will be placed into the record at this point. If you would like to summarize your statement, please proceed.

We are happy to have you with us, and those of us that have had the opportunity to go down to the Trident ship not so long ago, we thoroughly enjoyed it and learned a lot from it.

OPENING STATEMENT OF ADMIRAL McKEE

Admiral McKEE. With your permission, sir. I have a number of subjects to talk about on submarine-related developments and specifically the SSN-21. I plan to use some slides more as a teleprompter than for you to read, but I think it will help me at least keep on track.

I want to begin by giving you an overview of the program and my responsibilities.

As you know, Mr. Chairman, I have a cradle-to-grave responsibility for all aspects of nuclear propulsion, from the time we come up with a notion of what we want to do, until we bury the old reactor in the ground as we have just done out in Washington. I'm also responsible for all personnel and their training.

To summarize my responsibilities, I will talk about safety, and the associated subject of control of radiation and radioactivity, and then research and development and design. I also intend to talk about the basis for the research and development we are doing, and the question of why we need to do the things we are doing in the submarine force.

I put safety at the head of the list because it always is at the head of the list in my judgment. That has been reenforced by the unfortunate situation with Challenger. I watched lift off and explosion as it occurred and it sent me back to take a hard scrub of my own program, because like my own program the space program lives with acceptable risk. made acceptable by rigorous technical work and good management.

Thus far our record is good. In fact our good record may be one of our principal vulnerabilities because it makes things look too easy. But to put that in perspective, I would show you the Soviet record and ask you to suppose I had to show that record as my record here in this program, how much money would you be appropriating for my activities if I had that sort of record ———.

[Clerk's note.—Classified slide removed.]

In the environment in which we live, if I had even the perception of that kind of difficulty, it would change the fundamental structure of the Navy because nuclear-powered warships are, as you well know, a large portion of our Navy. I have a responsibility for 157 operating prototype and ship reactors. I will talk about submarines primarily, but I also have eight prototypes, nine cruisers and four aircraft carriers to worry about, and twenty-eight ships under construction.

[Slide follows:]

	Operating	Authorized
Class:		
Attack submarines	97	19
Missile submarines	38	6
Deep research vehicle	1	
Aircraft carriers	4	3
Cruisers	9	
Subtotal	149	28
Prototypes	8	
Total	157	28

Admiral McKee. I circled submarines because that will be my focus today, but what I say about nuclear things apply just as much to the surface ships, and some of the philosophical things apply as well.

Those are modern nuclear powered attack submarines, 97 of them, and the missile submarines which at the present time are a mix of the Poseidon subs and Tridents. As you know, Mr. Dicks, we are in the process of converting one of those into a training ship. I understand now that we face the prospect of laying two more up in May when the Nevada goes to sea.

SSBN TRAINING SHIP CONVERSION

Mr. Dicks. Let me ask a question on that. Are you going to use one of those for a training ship, too? I understand you need more than one?

Admiral McKee. I would love to use one, but I am reluctant to ask for it right now. I hate to see them disappear. That is what is going to happen. As currently planned both ships will be dismantled and inactivated to the point where I cannot use them. I just don't have money in the budget to do a second one at this time.

So I am sorry to see them go for that reason. I would really like to have the option to use one of the two being dismantled when we get a little further along with the one we have. Frankly, it would be a very large task to convert two at the same time.

Mr. DICKS. Thank you.

Admiral McKEE. I would like the option preserved to do a second training ship later on. We tend to think of the submarines in our Navy only in terms of ASW. But in fact submarines perform four of the six major missions the U.S. Navy has, this is not well remembered.

SUBMARINE MISSIONS

[Slide follows:]

Strategic deterrence; strike warfare; anti-submarine warfare; mine warfare, and amphibious warfare.

Admiral McKEE. Strategic deterrence--of course the Trident force; strike warfare—we have had very successful results with the submarine-launched missile systems. You may have read about them in the paper and later testimony will describe them.

Anti-submarine warfare—of course the submarine is clearly the best ASW platform in the business, and can operate anywhere in the world.

Mine warfare is one mission we tend to forget about, but that is a very significant naval mission. Covert mine warfare has a particular advantage because the enemy doesn't know what to do with that. If you even give him the notion the harbor is mined, it ties him in knots for extended periods of time. So there is an advantage in mining and a greater advantage in doing it covertly and letting him know about it on your own terms, and only a submarine can do that.

Also in amphibious warfare we are working more and more with the Marines and Special Forces on special elements of amphibious warfare. ———.

They have begin to work on that.

[Slide follows:]

Operate alone and unsupported.
Conduct offensive and defensive operations.
Remain on station for extended periods.
Coordinate with other forces.
Survive in the face of concentrated ASW.
Extract a favorable exchange ratio.

Admiral McKEE. Now, if submarines are going to perform those missions they have to be capable of doing the things I just described here. That is a must list. They have to be able to operate alone and unsupported. They have to be able to conduct offensive operations by working with other forces in a defensive role if that is the right thing to do.

If it is going to be a practical enterprise they need to be able to stay for a long time, and survive in case of concentrated ASW and kill more of the other guy than he does of us.

If a sub cannot do that there isn't any point in building it because it is in those specific capabilities that we find the leverage a submarine enjoys.

We talked about it before. One submarine operating alone in the broad ocean area controlled by the enemy ties up forces vastly out of proportion to its size. In World War II the wartime average was 15 to 1, 15 ASW platforms working all the time to do in one submarine on average.

So there is tremendous leverage with the right kind of submarines, but only if they are able to do that, and ability to do that depends on the characteristics of the submarine and characteristics of the threat, obviously.

SUBMARINE CHARACTERISTICS

[Slide follows:]

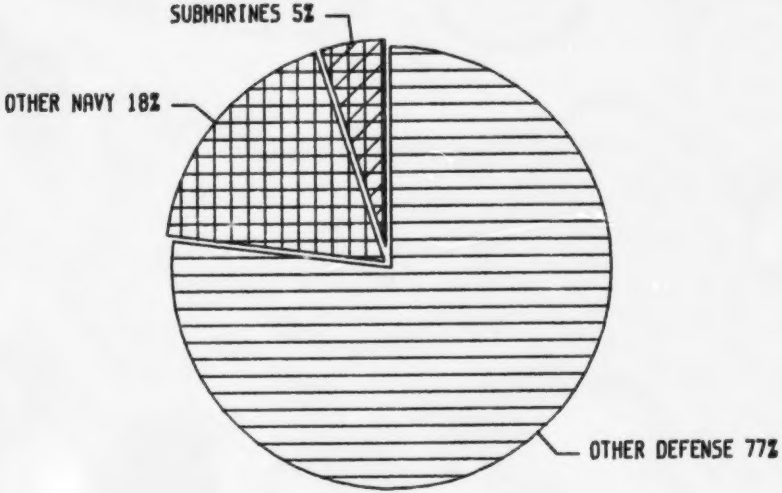
Speed, depth, longevity, silence, armament, toughness, safety, flexibility, and affordability.

Admiral McKee. These are the characteristics of a submarine. For the SSN-21 I will describe some of them. Speed and depth are obvious. Longevity—we need the boat to run for a long time because we are going to pay a lot of money for it. All the subs operating now were designed for a 20-year lifetime. One of the principal elements of my research and development effort is what I have to do to carry them on to 30 years which is where we are trying to go now. In surface ships, I have been asked to carry them as far as 45 years. That is well beyond the original design lifetime.

The rest of these, I think, are self-explanatory. The one on the bottom of course is of importance to this committee; affordability. To decide whether it is affordable, you decide not on the absolute cost but whether it will also do things you want it to do, that is, is it worth the money. Is the result worth the investment? To put that in perspective, let me give you some raw numbers. I don't think many folks realize, although I think I told you all on the trip, that the submarines are about 5 percent of the entire defense budget; only 5 percent. That includes the entire SSBN force, which means that you get the sea-based strategic deterrent for less than 3 percent of the Defense budget, and the other submarines for what is left.

[Slide follows:]

DEFENSE BUDGET BREAKDOWN
FY 1987



TOTAL FUNDING: $320.3 BILLION

DEFENSE BUDGET FOR SUBMARINES

Admiral McKee. In the Navy, the Navy deals with them all together, that is, a single resource sponsor is responsible for all things under the ocean, tactical as well as strategic.

Mr. McDade. On that pie chart in the percentages, is that a percentage of procurement or O&M?

Admiral McKee. That is a percentage of all expenses in a given year.

Mr. McDade. Total Navy expenses?

Admiral McKee. Yes. SCN, operating, personnel, the whole thing.

Mr. Dicks. That is based on the 1987 budget, is that the $320.3 billion?

Admiral McKee. Yes, sir, the 1987 budget.

Mr. Chappell. That is roughly 20 percent, almost 25 percent.

Mr. Dicks. That is the whole Navy.

Mr. Chappell. Twenty-five percent of the overall defense budget goes to the Navy then?

Admiral McKee. Close to that. Let me see if I can do the math.

Mr. Chappell. Eighteen and five is twenty-three, so it is a little over 25 when you add that in.

Admiral McKee. Yes, sir. A little over. In fact, submarines are—to look at operating expenses, submarines are 38 percent of the Navy's combatant forces, and we use 33 percent of the operating account.

On the other side of the river, as you know the Department of Energy supplies the money that I use for research and development in reactors. The Navy supplies their fair share of the rest of the submarine and propulsion, but to put it in perspective on that side I am about 5 percent of the DOE budget and for a comparison, defense programs, the folks that make the bombs, are 63 percent of the DOE budget.

Now, what that represents is a significant investment. I can talk percentages all day, the fact of the matter is we have over $100 billion of capital investment in our nuclear powered warships in the Navy.

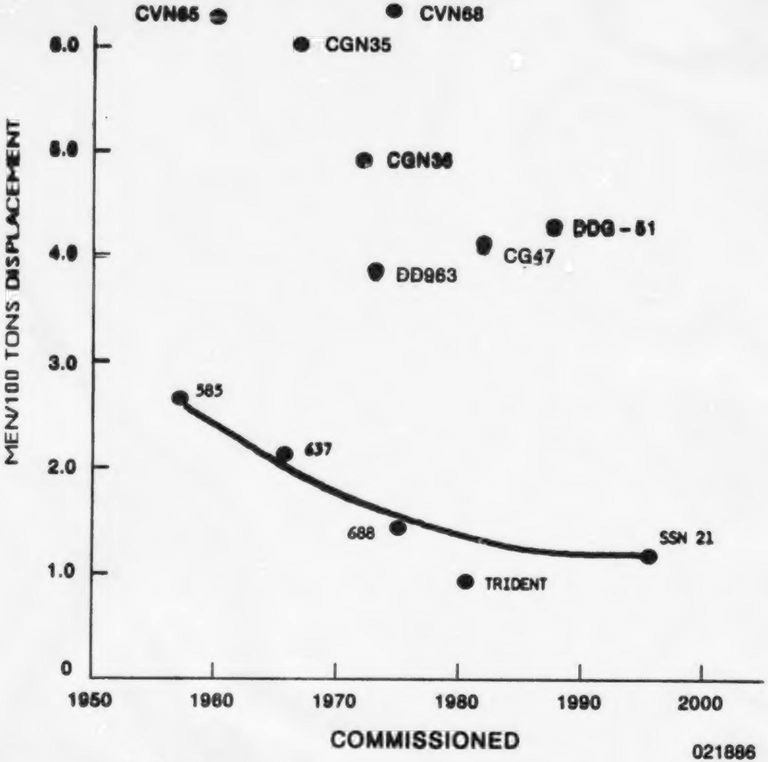
My job is twofold as I see it. I am stressing financial aspects this year because of how heavily they are playing. In this context, I have to protect that investment. I am going to talk about how we go about doing that.

I am also going to talk about the things we have to do to enhance our work because if we simply preserve the investment we have now, it will be out of date in a few years.

We have to do both.

Those things fall into several categories, for example, things we are doing to preserve that investment and keep it in balance. In manning, for example, submarines require less people than any other warship. The numbers have been going down. Those are numbers of people per ton of ship, which have no operational connotation but it provides an interesting comparison.

[Slide follows:]


CVN65
CVN68
CGN35
CGN38
DDG-51
CG47
DD963
585
637
688
SSN 21
TRIDENT
MEN/100 TONS DISPLACEMENT
6.0
5.0
4.0
3.0
2.0
1.0
0
1950
1960
1970
1980
1990
2000
COMMISSIONED
021886

SUBMARINE MANNING

Admiral McKee. We have about 155 people on the Trident, that is really hardly enough to keep the thing swept down very well. We really keep the crew down to absolute minimum. The number is driven more by the ability to man the ship at battle stations and handle battle damage than on the basis of day to day business.

[Clerk's note.—Classified picture removed.]

Admiral McKee. I put in a picture for you, Mr. Dicks, there is your submarine. We have to train them, too. One of the things we are doing is taking this Poseidon submarine that has been cut in half, putting it together and turning it into a training ship. That will save the government, not DOE, but save the government $600 or $800 million because of not having to build another prototype.

OVERHAULS

Overhaul of submarines is an expensive proposition so there are two things we have done to reduce the cost. One is to increase the interval between overhauls, and, second, we have done a lot of things to force the cost down between overhauls. The interval between overhauls now is 7 years coming down from about 3 years back in the 1960s. For SSBNs, it is out to a 12 year interval from 5 years.

The result is a big savings. The dollars that you pay per operating hour or month are significantly less with the extended period. We are just about to reach a decision that we can stretch the interval between 688 submarine overhauls. We may be able to avoid the first overhaul.

The cost of overhauls usually goes up as the ships get older. Even though we are into the third overhaul, in some cases we have managed to turn that trend over and the principal reason is some innovative things being done at the waterfront level in the shipyards. Mr. Dicks, your shipyard is doing a particuarly good job.

Mr. Chappell. Do you have a comment on that point?

Mr. Dicks. I am glad to hear that.

Admiral McKee. It is important to realize those are not management actions. We hear all sorts of things in the media we manage this and that. The only way you really do that is by the hard work of the guys in the trenches who decide they will do it right the first time. That is the major thing.

The work has been done very skillfully by a lot of guys to make that happen. My only concern is everybody will think it is happening because of some new management techniques, and that is just wrong.

The other end of the investment, of course, is enhancement. But also let me talk about research and development, and that is in both categories.

OPERATIONAL SYSTEMS RDT&E

Because I have a cradle-to-grave responsibility my research and development account looks screwy in the customary context of R&D in the DoD, and in DOE where normally you have a neat line item. In the DoD, you go from exploratory development up and up to engineering development and on up. I am doing exploratory development in terms of components that not only help me get the next boat on line and design the new one, but are important to making sure that I can take boats I have ———.

We are building reactors that would operate virtually the lifetime of the ship now if they had not changed the lifetime of the ship. We are coming on line with reactors ———.

Enterprise will have run for almost 20 years without refueling when she goes in for refueling this time. If she had been burning oil, it would have cost $600 million. We have the cores bought, ready to go into her. But those things have to be done well. The R&D has to be rigorously done, because it is not like any other device.

If you are building something into a reactor and you start it and it doesn't work right, you can't take it apart and try to fix it. Once the reactor is operated it is radioactive, and it is very, very difficult to do anything else with it.

So it has to be done right the first time, or it is a tremendous expense, and that is why we spend so much of our efforts making sure that we can continue to operate and protect this investment, and much of that is applicable to what we will do in the future.

I will talk about our procurement practices and talk about some procurements in some depth, but that is not really my business.

The important thing is to factor operating experience back into the ships we have and into the ships we will be building. That takes a good deal of our time and a good deal of our assets.

SSN-21 ATTACK SUBMARINE

QUIETING TECHNOLOGY

I am going to talk about the new submarine. I will start by talking about a submarine that I don't think very many of you have seen. This is AKULA. These are all to the same scale. This is a submarine that went to sea last year in the Soviet Union. This is their latest generation.

[CLERK'S NOTE.—Admiral McKee used models of these submarines to aid in his presentation.]

Admiral MCKEE. It is a ——— attack submarine. The mythology has it that the Soviets always build little, fast, cheap submarines and we build big, heavy, expensive submarines. Their little, fast one by the way is not cheap. Zolotaya ryba—that is Russian for the golden fish. It is very exepnsive.

But the AKULA submarine represents, I think, a significant breakthrough in performance and I will show you why.

To put it in perspective, here is the 688. And here is the new attack submarine that we are getting ready to build.

Our intelligence fellows told us that the AKULA got its start on the heels of the publicity that attended the initial and very successful sea trials of the 688 class.

Mr. CHAPPELL. Point out which one you are talking about by name, if you would.

Admiral MCKEE. Sorry. This is AKULA. This is LOS ANGELES class, and this is the SEAWOLF.

Mr. CHAPPELL. You are saying the AKULA——

Admiral McKee. The Soviets began the AKULA as 688, the LOS ANGELES, went to sea.

The time lines are very interesting. We got the 688 to sea and did nothing, except be proud of her. And we finally, after 20 years, started another class of submarines. They went ahead with AKULA and the performance of that ship is impressive.

Let me give you an example. In terms of speed and radiated noise, if you are going to talk about them in submarines, you have to talk about them together, because the faster a submarine goes, the noisier it gets. Without any sound quieting, it would go up rapidly. With the sound quieting we have put into the 688 class, ———.

TRENDS IN SUBMARINE DEVELOPMENT

[Clerk's note.—Classified slide removed.]

Admiral McKee. Their submarines over the years have looked like this. This is the ALFA. If you can see lightning and hear thunder, you can take him on. ———.

They built many Victor III's, and have made substantial improvements, ———.

That is going to make the price of poker a lot more expensive out there.

We didn't see AKULA until we were well into the design of the SEAWOLF. We have been working on SEAWOLF since 1982.

TECHNICAL GOALS FOR THE SSN-21

But that did confirm our predictions that folks didn't want to believe at the time we started on SEAWOLF. At the time we said it needs certain improvements, ———.

We needed to preserve the acoustic advantage for the long run ———. We wanted better sensors and we wanted a submarine much more heavily armed.

If you can build one that goes faster without making a lot of noise and is more heavily armed, you get a significant effective increase in force levels, because the guy doesn't have to spend his time going and coming. He gets to spend his time where it counts, and where he is least vulnerable, and that is on station.

Now, from the previous slide let me point out that this is our goal for the new design submarine. ———.

Now, as you know, we are also improving the 688 ———, but without the things we are doing for the new submarine, we cannot achieve the curve at the bottom of the chart.

[Clerk's note.—Classified slide removed.]

Admiral McKee. As a matter of interest, I thought I would show the curve for diesels. ———.

Mr. Chappell. Are these charts in your statement?

Admiral McKee. No, sir. But I will leave them if you would like to have them.

Mr. Chappell. We would like to be sure when you address these subjects, we know what charts you refer to.

Admiral McKee. I have them numbered, and we can give them an index.

The old mythology that a diesel submarine is quieter than a nuclear submarine is wrong, because superimposed on this graph is our goal for the SSN-21.

I explained that the principal——

DEVELOPMENT OF THE SSN-21

Mr. Dicks. Let me ask you a question, if the Chairman will allow.

How confident are you that you can reach your goal for the SSN-21?

Admiral McKee. I will talk to you about that now. ———.

One of the points I will make as I go through this is almost all the critical technology for this new submarine will be tried somewhere before it ever gets in the boat.

Mr. Young. Can I ask you a question about ———. We have a boatmaker back home who doesn't use a propeller at all. He directs a stream of water like a jet of water coming out the back where the propeller might have been. He actually guides the boat also by diverting that stream.

Is something like that feasible for a craft as big as a submarine?

Mr. McKee. It is feasible, but really very noisy. It is very noisy and very inefficient.

Mr. Young. Is it?

Admiral McKee. Yes. What this does is much the same.

[Clerk's note.—Classified discussion and slide removed.]

Admiral McKee. An improved performance main turbine will go to sea in 688 class submarine to prove the improved performance and machinery concepts before they go into the Seawolf program; an expensive, but necessary proposition.

How do you measure the value? You have to measure it two ways: What does it do for us, and what it does for the other guy. We build a submarine that can stay ahead of the threat and can operate alone and unsupported wherever it wants to go. It provides the fleet commander significantly improved offensive and defensive leverage which we spoke about at some length on the ship. It gives him the ability to dictate where the opposition must commit forces to protect themselves, and gives him additional tactical flexibility for the forces he doesn't have to commit.

We will get an increase in the effective submarine force level on station with the SSN-21. We now penalize ourself by the length of time it takes to go and come, and in a high threat area, we would have to shoot torpedos so rapidly we frequently would have to go back to reload.

Combat effectiveness improves as well. From the Soviet side, he has had to deal with submarines he couldn't handle for over 30 years. When they have to deal with submarines they cannot handle, it gives them an increased ASW force level requirement, forces them to commit resources to ASW forces that they would rather put in other places, and reduces their tactical flexibility because the amount of forces required to meet a competent submarine threat increases his risk dramatically.

As we increase our effective submarine force levels, the inverse occurs because the 15-to-1 ratio I have described earlier, forces them into a reduction of offensive force levels, while forcing them to spend money on new R&D to try to catch up, which they have been doing in great amounts.

Finally, an attack submarine can modify the entire strategic posture and it has. The Soviet strategic sea-based deterrent deployment posture is based on his concern for the opposition of U.S. submarines. If you look at the operating areas in which the Soviets operate, it is dictated by that concern.

We would like them to continue to have to deal with that.

The bottom line is leverage. What do you get for what you pay? You get a single ship that can influence the theater of operations dramatically, whether it is a strategic or tactical asset, but it can only do that if it has those fundamental characteristics I described previously—operating alone and unsupported, extract a heavy toll, and stay on station for a long period of time. That is what we have today in the 688s and it meets the threat extremely well, as do the others.

If the AKULA represents the next generation Soviet submarine and I think it probably does ———. It is time to get the SSN-21 started so that by the time the Soviets have a large number of AKULA in the next century, we have enough of the new SSN-21 class.

That is the end of my filibuster.

[The statement of Admiral McKee follows:]

Prepared Statement of Admiral Kinnaird R. McKee
Director, Naval Nuclear Propulsion Program

Fiscal Year 1987 is a critical year for the Navy and the Naval Nuclear Propulsion Program. A confluence of several current events could profoundly affect the Navy's nuclear powered fleet, including those ships now in the inventory, those we expect to build, and the men who will sail them. One of these is our request for initial funds to procure long lead material for our first new design attack submarine in twenty years, the SSN-21 -SEAWOLF. However, before discussing SEAWOLF, I would like to bring you up to date on the overall program.

We now have 177 naval reactor plants in 149 ships and eight land based prototype plants. Nuclear-powered ships now comprise more than 40% of the Navy's combatant fleet. Last year we added four more ships to the fleet, and we have 27 additional ships authorized or under construction. Our responsibility for safe and reliable nuclear propulsion plant operation continues to expand as the fleet grows and ages. Half our operating ships are approaching their initial design lifetimes.

Our nuclear-powered ships represent a highly leveraged investment in national defense. When their contribution is weighed against their relatively small and stable resource requirements, it becomes apparent just how good a bargain these ships really are.

But we must remember that this leverage works both ways. The potential impact of an apparently small pro-rata reduction on safety and operational effectiveness is way out of proportion to its real dollar value.

Nuclear-powered ships have now steamed over 65 million miles, without a reactor accident and without release of radioactivity having a significant effect on the environment. This record reflects the continuous adherence to high standards and technical integrity which have been the hallmark of the Naval Nuclear Propulsion Program since its inception.

We have had a wide margin of superiority over the Soviets in all aspects of submarine warfare. Though the Soviets outnumber us, we have been able to count on technical superiority to help even the odds. The Soviets have now substantially closed that gap, and are near technical parity in undersea warfare. Last year I told you they had introduced four new attack submarines in the last three years. We now know that the latest has substantially reduced our performance margin. For years we have had the best people and the best submarines, but if this trend continues, the principal difference may only remain in the skill of the operators.

Many will probably view these reports of Soviet improvement with suspicion — are they really that good? Others have asked how the Soviets could achieve their present levels of performance when many intelligence indicators predicted this would not happen until the next decade. Why were we "surprised"?

Well, the Soviets are that good, and we are not surprised. My principal feeling after the first intelligence briefing on the new Soviet boats was one of great disappointment, because it was clear that we were party to the event. In the mid-@970s, the Soviets saw what the 688 Class could do and immediately redoubled their efforts to catch up. The product of that effort is now at sea and operating well.

Even so, we are not yet too late. 688s will have a tough time with the best of the new Soviet submarines, but they will still be able to handle them — for a while. It is with the next Soviet generation in mind that we have laid the groundwork for SEAWOLF.

More has been done to tailor SEAWOLF to specific military requirements than any submarine since NAUTILUS. She will be quieter, faster, and more powerful than any of her predecessors. The Naval Reactors Program is developing a propulsion plant which will deliver significantly more power at about the same size and weight as our existing plants. The SEAWOLF reactor will be more efficient and quieter at all speeds than any preceding plant. She will also have significantly improved secondary machinery.

We need SEAWOLF as soon as possible. Our initial intention was to seek a Fiscal Year 1987 authorization for the first of the class, but fiscal pressures and the technical challenge inherent in the design made it clear that a Fiscal Year 1989 authorization was better. The present schedule will get her to sea in Fiscal Year 1995, and we are on schedule. Contract design will be completed this fall, and competition for detailed design will follow. The design of all major propulsion plant equipment is well along, as is the test program that supports design decisions for long lead components. Fiscal Year 1987 advance procurement funds are needed for equipment, including the reactor plant, which is critical to meeting the ship construction schedule.

We are proceeding at a very deliberate pace for the sake of economy and technical conservatism. We are spending more time in the design and development phase of SEAWOLF than for any prior submarine. To put that in perspective, consider the crew who will man the ship. SEAWOLF's first Commanding Officer is currently a junior Lieutenant. He has probably just qualified in submarines. His Executive Officer is probably an Ensign. The CPOs are Second or Third Class petty officers. The rest of the officers and crew are still in high school and college.

At the same time, we are mindful of the difficult budget situation this year. Major uncertainties have been inserted into the process. The choices will be hard, but arbitrary pro-rata cuts are not the answer. Some things are inherently more important than others. Safety and operational effectiveness deserve special attention. Like any good banker, we should invest our available funds in those things that provide the greatest return.

And no matter how tight things get, we can't afford to neglect the future. SEAWOLF is a critical investment — one which must be made now. We are late, but not yet too late to preserve our advantage. We must support what we have set in motion. Otherwise, we will concede superiority in one of the few areas where we now hold an unequivocal advantage. Even more, we may also put our entire strategic and tactical investment in nuclearpowered ships at risk.

A man who owns a fine home cannot afford to skip his insurance payments — he puts at risk not only his most important investment, but also perhaps his way of life, all for relatively small short-term savings. The same thing can happen to the nuclear Navy. Congress has always recognized this, and has supported the Program well.

U.S.-SOVIET CAPABILITIES

Mr. CHAPPELL. When do you expect to go to sea trials with this?

Admiral McKEE. In 1994. It will be 12 years in gestation by the time we go to sea.

Nautilus went from a gleam in Admiral Rickover's eye to sea trials in less then ten.

Mr. YOUNG. Where will AKULA be in 1994?

Admiral McKEE. ———.

Mr. CHAPPELL. Are we increasing the gap with the Soviets?

Admiral McKEE. The AKULA going to sea represents a substantial decrease in our advantage. ———.

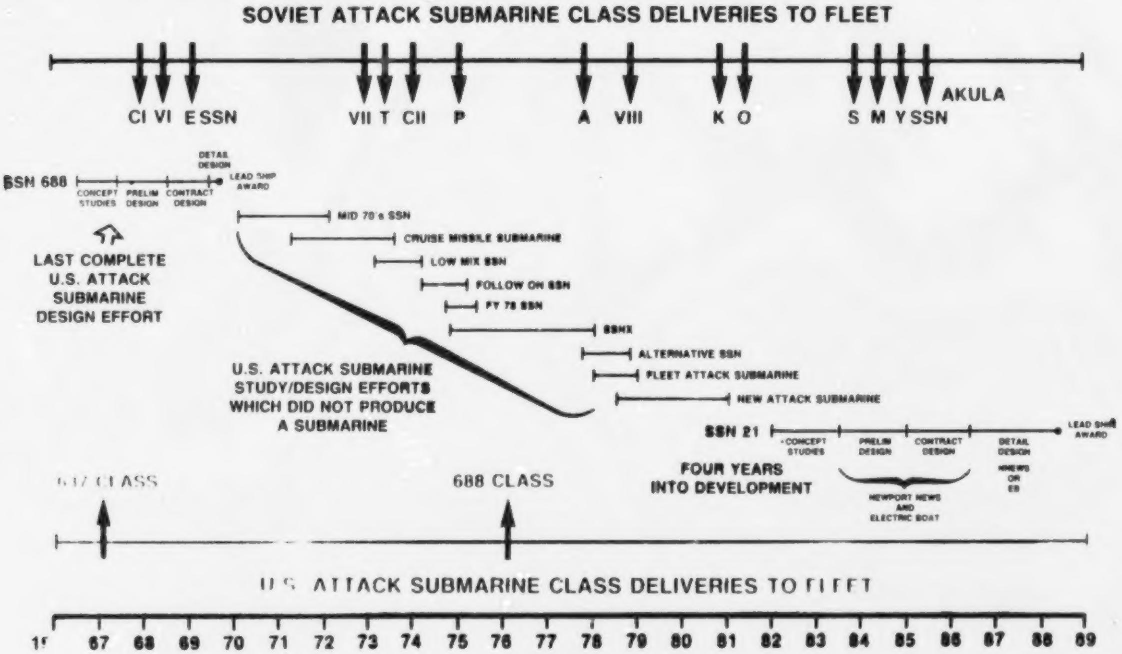
Mr. CHAPPELL. Force against force, how do we compare with the Soviets?

Admiral McKEE. If we went today I don't have any doubt that we could win. The Soviets have a number of very capable, modern submarines, but we have more of what I would call first-line submarines than they do, not in terms of absolute numbers, but in terms of first-line boats. ———.

My concern is for the future. One of the things that jumps out at you is that we have not been very serious about building submarines. We have built them, but we haven't done anything but study the next evolution. We used to build test submarines; we built a lot of different submarines in the early days to learn how, but since then we fell into the business of doing studies.

[Slide follows:]

ATTACK SUBMARINE DEVELOPMENTS



452

Admiral McKee. We designed the 637 class here and sent it to sea in 1967 and ten years later sent the 688 class to sea. We run off the scale before anything else will go to sea. The Soviets have built, and continue to build, new types of attack submarines that are sent to sea so they can learn by doing. It is due to that incredible engineering and procuring effort that they have made the progress we see.

All we have done is pay beltway bandits to do studies. That is why it is very important to move now because the weight of effort they have is going to cause them to catch up.

Mr. Chappell. How many AKULAs do they have on line now?

Admiral McKee. Only one. The first one is at sea today.

Mr. Chappell. What is their buildout capability?

Admiral McKee. We don't know. We have to wait and see.

One of the largest classes that they have built was the Victor III. I will have to correct it for the record, but I think it is somewhere on the order of 21 boats, and they got into production fairly rapidly.

The Victor class was the next generation after their first generation of submarines. They have gone through three modifications of the Victor class, ———.

They have not built a lot of the same thing except diesel boats years ago. They have not built many of the same thing because they still haven't found the answer. They are still doing what I showed up here.

SUBMARINE PRODUCTION CAPABILITY

Mr. Chappell. What is their capability in production as compared to ours?

Admiral McKee. It is significantly higher. We have two places that can build submarines now, Newport News and Electric Boat. We know we can build two Trident submarines a year and Newport News might be able to build one a year, which might get us up to three.

The facilities are probably available to do that, and I think we could build upwards of six or seven attack submarines a year. Our entire physical plant for nuclear submarine construction, putting both yards together, would fit in a small corner of the largest Soviet yard.

They have massive facilities and nobody really knows how fast they can build submarines or how many, because it is really almost beyond my comprehension they are so big.

NATO-SOVIET CAPABILITIES

Mr. Chappell. If you take into account the total NATO capability against the Warsaw capability, how do we stack up?

Admiral McKee. It is a pretty good match. The NATO countries have around 110 diesel submarines and the British add 14 nuclear attack submarines and four nuclear Polaris submarines to the game. If you take the NATO force, it then becomes about 110 nuclear attack submarines, and about 110 diesel submarines.

[The information follows:]

NATO SUBMARINES

	Diesel	SSN	SSBN
Canada	3		
Denmark	4		
Germany	24		
Greece	10		
Italy	10		
Netherlands	[Deleted]		
Norway	14		
Portugal	3		
Turkey	17		
United Kingdom	15	14	4
Subtotal	[Deleted]	14	4
United States	4	97	38
Total	[Deleted]	111	42

Admiral McKee. That NATO force is a pretty good match for the Soviet force, which totals somewhere on the order of 350 boats.

Mr. Chappell. Do any of the Warsaw Pact countries have similar capabilities?

Admiral McKee. They have some old fashioned diesel submarines. There is some talk that the Soviets will begin to export some of the more modern diesel submarines, but we have not seen that happen.

COMPARATIVE COSTS: SSN-688 AND SSN-21

Mr. Chappell. What is the comparative cost between the SSN-21 and the SSN-688?

Admiral McKee. The 688 today costs $600 million. The improved 688 with the features you have described will come in further down the line at $750 million, and the new boats, the SSN-21 which in series production is supposed to come in at or below a billion dollars. It has been capped but we don't have a firm number on it. But it is being designed to that cost.

NUCLEAR TRAINED OFFICER AVAILABILITY

Mr. Chappell. What about nuclear trained officers? Do we have a shortage or do we have plenty of them?

Admiral McKee. Things look good right now in terms of input and retention. We are getting a lot of very bright, young guys.

I just interviewed 29 of them yesterday, and I took most of the guys I saw, first-rate people. Retention is up somewhere on the order of 48, 49 percent. Our goal is 55 percent.

The place we are still suffering, and will for some time, is in retention of senior officers. We are short of senior officers, commanders and captains, and we are going to be that way for some time until the junior officers grow up in the system.

Mr. Chappell. Do you still use the Rickover approach on selection of officers?

Admiral McKee. Yes, sir. My style is a little different and the chair has four equal legs on it, but they don't enjoy it, I don't think, anymore with me than they did with him.

Mr. Chappell. Mr. McDade.

USE OF SUBMARINES IN LIBYAN OPERATION

Mr. McDade. Thank you, Mr. Chairman.

In the Libyan operation, there were submarines used. Were they under your command?

Mr. McKee. No, sir. They were nuclear submarines, but they are operating for the fleet commander over there.

Mr. McDade. Do you know what mission they performed there?

Admiral McKee. I am not sure I can talk about it. It is fairly sensitive. I think you would have to ask the CNO about that.

Mr. McDade. We will be glad to do that.

Thank you, Mr. Chairman.

Mr. Chappell. Mr. Dicks.

REACTOR SERVICE LIFE EXTENSION PROGRAM

Mr. Dicks. You talked about the impact of service life extensions. Do you have a reactor now that would go for 30 years on a submarine?

Admiral McKee. Without refueling?

Mr. Dicks. Yes.

Admiral McKee. I have reactors that will go for 30 years, but not without refueling. The best I can do is about 15 to 20 years without refueling.

Mr. Dicks. So the 30-year goal in terms of the propulsion plant is not a barrier?

Admiral McKee. It really isn't, but there are elements of the propulsion plant that because we designed it for 20, we have to do a lot of research to make sure it can go to 30.

For example, steam generators have miles of small tubes which make up 80 percent of the pressure boundary in the primary plant. A leak in a single tube could give you a bad day.

We are devoting a tremendous amount of research and development to metallurgical behavior of that kind of material in the inhospitable environment of the various chemical compositions of water to be sure that the corrosion in the steam generator and other phenomena are understood. We are pretty sure we can take them to 30 years but it takes a lot of work to verify it, and in our business, there is no margin for error. One accident or perception of an accident would make the *Challenger* problem seem insignificant.

Mr. Dicks. When you are talking about the aircraft carriers, you talk about 45 or 50 years. In that situation, are you going to have to put in a new reactor?

Admiral McKee. No, the core that is in those plants right now is good for about 15, 16 years ———.

Mr. Dicks. But you put a new core in?

Admiral McKee. We would have to refuel it ———. Refueling is not a problem; the key is the other equipment that doesn't get changed—we have to make sure they will last.

Mr. Dicks. You are working on that?

Admiral McKee. Yes, sir.

SSN-21 AFFORDABILITY

Mr. Dicks. Are you going to run into an argument from some that with that chart you had showing the improvements in the SSN-688, that you are going to get ahead of the curve again with the Soviets and that, therefore, with affordability problems being significant, that you are going to run into a problem on your new submarine, your SEAWOLF, because of that?

Admiral McKee. Affordability is in anything, it is not an inexpensive boat. I think what you have to do is try to figure out what you get for what you spend, and the leverage that you get from a submarine that can do the things that we can do today. SEAWOLF has to be good enough to do those same things tomorrow. The leverage gained is far out of proportion to the actual cost of the boat. That is the factor we have to come back to for any submarine.

Look at a Trident submarine. It keeps us far enough ahead.

Eventually, U.S. and Soviet submarine capabilities will converge. Then we will have to think about different applications for submarines because ASW is only going to become a defensive business for submarines in my judgment. It will be blind man's bluff with other submarines. Many of the other roles for submarines will become more predominant as we go further into the future, because at some point, nobody will be able to find a submarine with anything.

SALT II AND POTENTIAL FOR SSBN TRAINING SHIP

Mr. Dicks. You mentioned you would like to do something with one of these training platforms. If they dismantle the submarine under SALT II procedures, then it is beyond your ability to use it?

Admiral McKee. Yes, sir, because the money that is allocated to take them out of commission really just cuts them in half and puts them together again well enough to make them float. There is no provision made for preserving any of the internals. The propulsion plant can't be walked away from and then brought back at a later time when we decide we want to run it. If you don't keep it in service or suitably preserved straight through, the metallurgical and chemical things that happen inside make it inoperable.

Mr. Dicks. Thank you, Mr. Chairman.

Mr. Chappell. Admiral, Mr. Dicks was at the controls of the Trident not too long ago. A lot of us observed him. Was the crew impressed with the way he drove that submarine?

Admiral McKee. They all commented on it. [Laughter.]

Mr. Dicks. That is a good political answer.

Mr. Chappell. Mr. Young.

UNDER ICE CAPABILITY

AKULA UNDER ICE CAPABILITY

Mr. Young. Thank you, Mr. Chairman.

Admiral, on the AKULA, do you see anything there that would give them any particular advantage under the ice?

Admiral McKee. Advantage over our new boat under the ice?

Mr. Young. No, advantage over what their present boats have.

Admiral McKee. ———.

Mr. **Young**. I know for a long time in our briefings we were told that the Soviets were doing a lot of experimentation so that they could work effectively under the Arctic ice.

Admiral **McKee**. Yes, sir.

Mr. **Young**. Is that still the situation or are they doing that since they haven't done anything to this boat, and they have run out of ideas?

Admiral **McKee**. No—the techniques they needed were well proven. There is nothing they needed to do to this boat that they hadn't proved in other applications. ———.

It is a major effort, and we are very serious about getting good at it, because it is clear the Soviets are going to work up there and if we can work up there, too, that will create more uncertainty for them in a strategic sense.

U.S.-SOVIET UNDER ICE CAPABILITIES

Mr. **Young**. We will get into the ASW part of this effort. In the operation we are involved in there now, are you able to compare capability with the Soviets under the ice? Where do we stand? Where do we stand?

Admiral **McKee**. ———.

Mr. **Young**. What about their ability to track us up there or perform their anti-submarine tactics? Are they good at that?

Admiral **McKee**. There is nothing that can work against a submarine under the ice except another submarine. Aviation is out of luck unless you can find a hole in the ice to drop a sonabuoy down. So the only thing that works in the ice is a submarine. ———.

Mr. **Young**. Thank you very much, sir.

Thank you, Mr. Chairman.

Mr. **Chappell**. Mr. Livingston?

SOVIET ADVANCES IN SUBMARINE TECHNOLOGY

Mr. **Livingston**. Thank you, Mr. Chairman.

The Soviets have made tremendous strides in the last few years in quietness, and in fact, much more so than we ever projected.

Do you anticipate that they are going to continue this rate of progress and that they are going to keep up with the advances we are going to make in the next few years?

Admiral **McKee**. I think it will converge sometime in the next century, because there are limits as to how far you can go.

What we did to make the 688 as quiet as it is now is to reduce all the energy to the leakage equivalent of one size D flashlight battery, and it gets a little hard to go beyond that and that is what we are doing here.

It is not the Navy position, it is just a personal view that submarines will become quieter to the point where they really don't bother one another and can devote their time to other missions, primary missions, and we would see the ASW role as strictly a defensive thing.

We clearly have to fully develop our ASW ability even if it is not the primary mission you aren't so we can defend ourselves in a hostile environment where the other folks are looking for us. However, I think the ASW mission will gradually become a second or third order.

SALT II LIMITATIONS ON SSBN DEPLOYMENT

Mr. LIVINGSTON. Do you have a personal opinion on whether we should scrap Polaris for a Trident?

Admiral McKEE. It is a budgetary matter, and it is a question of where you spend your money. There are two questions: Do you want to spend the money to overhaul and operate them, and do you want to take the political risk that goes with an apparent violation of SALT?

Mr. LIVINGSTON. It is really the latter that I was referring to.

Admiral McKEE. As you well know, you could avoid the SALT violation by doing away with other kinds of strategic systems.

Mr. LIVINGSTON. Thank you, Mr. Chairman.

GRAMM-RUDMAN-HOLLINGS IMPACT

Mr. CHAPPELL. Admiral, what effect is Gramm-Rudman-Hollings going to have on you?

Admiral McKEE. If it goes to extreme, I am out of business in about five years.

Mr. CHAPPELL. What has it done for you already?

Admiral McKEE. It has imposed a 5-percent reduction on me in 1986, and that has made it hard for me to do some of the things I was going to do, but I have been able to handle that.

Mr. DICKS. Did they give you flexibility in how to deal with that?

Admiral McKEE. In 1986, yes. But the specific problem I have and you are going to have other program managers up here telling you the same thing is the erosion of my budget over time. The annual amount of money spent in this program since 1954, converted to the same kind of dollars, is basically flat all these years. There are bumps every time we did something new. A new development comes along, and goes away, but over the years it has fundamentally been flat.

But because we are a cradle-to-the-grave operation, it is like raising children; you have them, and as the number of ships has increased, I have had to devote larger and larger percentages of my resources to make sure the ones I have work safely--safely and effectively. So the discretionary money I have gets smaller and smaller and that is assuming that the growth in nuclear ships eventually flattens out. It hasn't yet. A 5-percent cut on my R&D account is really on the order of a 20- or 25-percent cut in the discretionary money because I cannot stop doing the things I must do to keep these ships operating. Because Gramm-Rudman whacks away automatically, indiscriminately, you can see how the discretionary amount will be wiped out pretty quickly, and I will get to the point that I will have to say to the CNO that I cannot certify safe operation of the ships.

Mr. CHAPPELL. Assume a 10-percent reduction. What would that do in 1987?

Admiral McKEE. We took the worst-case Gramm-Rudman and projected it for the next 5 years, and it took me well below the line. At the end of 5 years, I had to divest myself of one of the laboratories in terms of my research and development budget, and that would leave me without the ability to have one lab check the other, and in things nuclear, that is not a good idea.

That doesn't deal with our ability to support operation of ships. My comment was strictly R&D. If Gramm-Rudman were to run its course unattended, it would put us in a position of having to shut down.

In fact, it is worse than that, because many times you can just keep reducing the number of items—lay up airplanes, ships and run the rest of them—but there is a certain level of sustaining work I have to do which would flatten the curve out. I would still have to do a lot of things for a few ships that support a lot of ships today. It would just be awful.

Mr. CHAPPELL. Any other questions, gentlemen?

Admiral, we would appreciate it if you would answer some additional questions for the record.

[CLERK'S NOTE.—Questions submitted for the record and the answers thereto follow:]

SSN-21 ATTACK SUBMARINE

AFFORDABILITY

Question. Many programs now entering full-scale development were designed under an assumption of substantial annual increases in the defense procurement accounts. The SSN-21 is a case in point. It is now estimated that under continuing zero real growth, the SSN-21 will require 32 percent of all shipbuilding funds in the 1990's as compared to the 20 percent historically allocated to submarine construction. This would draw off funds normally allocated to other important ship programs. Given this strict budget climate, do you see trouble ahead for the Navy's ability to procure its required number of SSN-21's due to its high unit cost?

Answer. If zero real growth occurs, the Navy will have to weigh the threat against the budget constraints to determine the best possible force structure.

Question. In addition to the procurement costs, the SSN-21 will cost $3.4 billion to develop. As such it is one of the Navy's most expensive R&D programs. The Navy has placed a management cap on R&D costs for many programs in order to provide firm design guidance and cost control. There is no such cap on the SSN-21, and these costs have been increasing. Do you believe there should be a cost cap or cost goal? If not, why not?

Answer. R&D costs for SSN-21 have not been increasing. A total R&D goal for SSN-21 exists and is contained in the SSN-21 Test and Evaluation Master Plan (TEMP). This goal has been followed in all budget requests.

COMBAT SYSTEM DEVELOPMENT

Question. In 1985, the Submarine Advanced Combat System (SUBACS) program, which was to develop a baseline combat system for the SSN-21, was significantly restructured by the Navy. These problems led to a delay of approval to enter full-scale development for SSN-21. What impact did SUBACS technical problems have on the SSN-21 shipbuilding schedule?

Answer. None. The Navy's restructuring of the SUBACS program did not entail actions that would jeopardize the scheduled delivery of SSN-21 in December 1994.

Question. The FY 1987 budget assumes that a variant of the FY 1989 Combat System will be developed for SSN-688's procured in that year. The S&I staff has interviewed senior Navy officials who describe this plan as an "obvious mistake" which is "certain to create problems for the SSN-21". What is your view of the risk in developing parallel systems for the SSN-21 and the SSN-688's to be procured in FY 1989?

Answer. Combat systems development is not within my area of responsibility. However, I see nothing about the Navy's current plan that should create problems for the SSN-21.

REACTOR DEVELOPMENT

Question. The Navy is requesting $60.9 million in FY 1987 for continued development of the "S6W reactor", which is being designed for the SSN-21. What is the current status of this effort?

Answer. SSN-21 plant work is proceeding well. Equipment under development includes pumps, pressurizer, valves, steam generator, instrumentation equipment and auxiliary equipment. Work also includes equipment and system arrangements and construction of full scale mockups. The major items of equipment, such as the steam generator, main coolant pump and principal valves are well into design, and fabrication is underway of engineering test units. Models of all major reactor components have been installed in the propulsion plant lockup. Equipment and system arrangements in the plant are being confirmed. Overall the development work is on schedule to support the planned award of a ship construction contract in early 1989.

Question. How would you assess technical risk for the remainder of the development schedule?

Answer. The technical risk associated with the remainder of the S6W development is low. The work is currently on schedule and we are testing extensively to discover and correct problems before they can effect the lead ship schedule.

Question. Last year, Congress approved a $23 million increase in this project for FY 1986 to accelerate the development of a ——— facility for the SSN-21 reactor. What is this facility, and why was the acceleration necessary?

Answer. ———. The schedule for the SSN-21 reactor plant dictated that component development start earlier than first estimated in order to have them tested in the ——— Facility and allow sufficient time to make any design changes found necessary. The increase in FY 1986 allowed development to proceed at this pace.

Question. Navy stated at that time that these additional costs would be more than offset by outyear savings. For the record, would you list those offsets by fiscal year?

Answer. The FY 1986 net increase of $23 million represents a $27 million increase to support this earlier component development offset by decreases for work transferred out of the program element, and an inflation adjustment. The $23 million increase was offset by reductions of $36 million in FY 1987 through FY 1989. The offsets by year were ($28M) in FY 1987, ($3M) in FY 1988 and ($5M) in FY 1989.

Question. Last year, the Navy stated that the S6W plant would cost $345 million to develop. What is that estimate as reflected in the FY 1987 President's Budget?

Answer. The $345 million represented the S6W requirements from FY 1985 through FY 1991, the end of the then current Five Year Defense Plan (FYDP) period. The figure today is $365.5 million which reflects the FY 1986 Gramm-Rudman reduction and the addition of the FY 1992 cost from the current FYDP.

DIESEL SUBMARINES

Question. Admiral, there has been considerable controversy in the past few years about the viability of augmenting our nuclear submarine fleet with a small number of diesel submarines. Your office has adamantly opposed the introduction of diesel submarines. Why is a mix of nuclear and diesel-electric submarines a bad idea for the U.S. fleet?

Answer. The collective allied submarine force is a mix of diesel and nuclear submarines. Our allies contribute over 100 modern diesel submarines. This diesel submarine force is adequate to fulfill likely missions and supplements our nuclear submarines.

A diesel submarine can be effective when short transit and search requirements exist such as guarding choke points. Because of geographic location, this means diesel submarines are more appropriate for our allies. Diesel submarines do not have the requisite mobility and endurance to meet our global maritime responsibilities.

At present submarine force levels, acquisition of diesel submarines would not increase the capability or effectiveness of U.S. naval forces.

Question. How does the radiated noise level of a diesel submarine compare to that of a nuclear submarine, assuming state-of-the-art technology in both areas?

Answer. ———. In addition, nuclear submarine endurance is not constrained by the need to snorkel which significantly raises radiated noise and exposes masts thereby dramatically increasing diesel submarine vulnerability.

Question. Wouldn't diesel submarines generally be cheaper, and therefore affordable in larger quantities?

Answer. Diesel submarines are cheaper, but are not inexpensive as measured either by dollars or mission effectiveness. The procurement cost would be about one-half that of a nuclear submarine. However, Navy studies conclude that diesel submarines are not cost-effective for the U.S. because they cannot fullfill mission needs.

ACQUISITION STRATEGY

Question. In 1985, the Navy established a new acquisition policy which requires the use of fixed-price contracts during full-scale development with very few exceptions. At present, nuclear propulsion

R&D contracts are of the cost-plus type. Does the Naval Nuclear Propulsion Program intend to begin negotiating fixed-price contracts for full-scale development? If not, on what grounds would a waiver be based?

Answer. No waiver is needed. System development is accomplished at government-owned, contractor-operated laboratories under cost reimbursable contracts. The components are procured using fixed-price subcontracts.

Question. For the past two years, there have been attempts in Congress to introduce further competition in the design and procurement of major components for the SSN-21 reactor. The Navy recently completed a Congressionally-directed report on this issue. Why does the Naval Nuclear Propulsion Program so strongly oppose additional competition?

Answer. The program does not oppose competition, in fact vigorous competition has been the hallmark of the program since its inception. For a complete discussion of this subject, please see the Secretary of the Navy's February 14, 1986 Report to Congress on the Industrial Base for Design and Construction of Nuclear Components for the SSN-21 Class submarine.

TECHNOLOGY BASE

Question. What areas of basic research are important to the Naval Nuclear Propulsion Program, and what budget trends do we see in those areas?

Answer. The Naval Nuclear Propulsion Program is basically self sufficient. The Nuclear Propulsion Technology program element (P.E. #62324) encompasses my basic Navy development work. Work in the hull, mechanical and electric areas, though, is necessary to support overall submarine development. I do not have the details as this work is spread among many program elements. However, I understand that effort in these areas has been declining for many years, except for the recent Improved Performance Machinery Program. We need to maintain an active effort in the following areas to improve stealth, mobility, survivability and power density in future ships:

a. Ship hydromechanics ———.

b. Alternate materials ———.

c. Detectability ———.

Question. Describe planned FY 1987 work in these projects, by program element, and provide a funding profile for FY 1985-1988.

Answer. Funding for Naval Nuclear Propulsion Program work is provided under the Nuclear Propulsion Technology program element (62324). Work is carried out in three broad areas: Nuclear Plant Technology, Plant Materials Technology, and Reactor Component Technology. Nuclear Plant Technology work includes the development of nuclear design methods, testing of advanced concepts and improved designs, and reactor safety analysis procedures and programs. Plant Material Technology provides for materials development and applications that are required to meet needs and to assure satisfactory performance and reliability of materials and components in naval nuclear propulsion plants. Reactor Component Technology entails development of improved instrumentation and control equipment, heat exchangers, pressurizers, pumps, steam generators, and valves for naval nuclear propulsion plants.

The FY 1985-1988 funding requirement for this program element is as follows: FY 1985-$47,845,000; FY 1986-$46,214,000; FY 1987-$47,020,000; and FY 1988-$49,216,000.

The hull, mechanical and electrical work previously mentioned is a part of numerous program elements in the Navy's 6.2 and 6.3 categories. I do not have the details.

[CLERK'S NOTE.—End of questions submitted for the record.]

Mr. CHAPPELL. Admiral, we appreciate your being with us today, and we especially appreciate your very fine testimony. Thank you very, very much.

Admiral MCKEE. Thank you for asking me.

BLANK PAGE

THURSDAY, APRIL 10, 1986.

MANAGEMENT OF AUTOMATIC DATA PROCESSING SYSTEMS

WITNESS

JOHN SPRINGETT, DIRECTOR FOR INFORMATION RESOURCES MANAGEMENT SYSTEMS FOR THE COMPTROLLER

INTRODUCTION

Mr. CHAPPELL. The committee now will conduct a hearing on the management of Automatic Data Processing (ADP) systems in the Department of Defense.

We intend to primarily address non-tactical, or general purpose computers rather than those embedded in DoD weapon systems.

The Department is budgeting $8.2 billion in fiscal year 1987 to procure, lease, and operate such equipment. There are 109 major automated information systems in the Defense Department, at last count, with life cycle costs that exceed $38 billion.

In 1984, the committee directed that uneconomical leases of ADP equipment by the Defense Department cease in cases where it is cheaper to buy the equipment out-right. The Defense Department strongly responded to the committee's direction and as a result, has been able to document hundreds of millions of dollars of savings. Today, we would like to discuss the extension of this policy to other than ADP equipment.

In last year's report, the committee expressed a number of concerns about the Department's management of these important ADP programs. The committee is pleased to note that the Department, and in particular its Comptroller, has acted swiftly to respond to the requirements in the committee's report.

Like weapon systems, there is now for the first time a single body in the Office of the Secretary of Defense responsible for oversight of major automated information systems. The role of the Major Automated Information Systems Review Council, under the Comptroller's direction, has been expanded to fill a management void. In addition, competition in Defense ADP is at an all-time high.

Today's witness is Mr. John Springett, Director for Information Resources Management Systems for the Comptroller.

Mr. Springett, it is a pleasure to have you here today. We hope to have a short hearing, and we will have a number of questions for the record dealing with the technical aspects of your ADP programs.

Mr. Springett, would you please briefly summarize your statement?

OPENING STATEMENT BY MR. SPRINGETT

Mr. SPRINGETT. Thank you, Mr. Chairman.

Mr. Chairman, due to the very recent change in the hearing schedule, Mr. Helm will be unable to be here today. However, he has asked me to briefly present to you and members of this subcommittee the information he planned to share with you.

Last year the conference committee requested that the Comptroller appear before you during the fiscal year 1987 appropriations hearings and demonstrate that the Department has taken aggressive action to strengthen its management and oversight of general purpose Automatic Data Processing (ADP).

I believe the Department of Defense has a good story in that regard, and I would like to present it to you briefly in the next few minutes.

The Department's general purpose ADP systems are essential in supporting the everyday business and operational functions of the Defense Department, such functions as payroll, personnel management, logistics, finance and accounting, and resource management.

I believe that our life cycle management policies represent a solid foundation for managing both large information system projects and office automation systems. The life cycle management process uses a predetermined sequence of key decision milestones.

ADP program advancement is approved or disapproved at each milestone. The significant elements of life cycle management are, one, early planning; two, executive oversight; three, early determination of costs; and, four, accountability.

We are constantly taking steps to improve the quality of our management review process for major automated information systems. Recently, we observed a number of issues coming to our principal oversight mechanism, the Major Automated Information System Review Council (MAISRC), which should have been resolved earlier. As a result of the late detection of these problems, the progress of the programs was interrupted while we resolved them.

A policy analysis was conducted to determine the source of these problems. The goal was to identify the actions necessary to strengthen the management of our programs and to accelerate the overall process of ADP system acquisition. During the course of our analysis, we worked closely with the ADP program managers and the Military Department staffs in defining the problems and developing the proposed solutions.

The study revealed two important concerns. First, the difficulties observed concerned the comprehensiveness and quality of specific, needed program tasks, rather than with the acquisition process itself. While our policies and procedures are clear, the people charged with the tasks were having implementation difficulties.

Secondly, and related to the first concern, deficiencies in the experience or education of the program management staffs contribute significantly to the problems and delays in successfully completing these program tasks.

This past November, in coordination with the Military Departments, the Comptroller approved a program that focuses primarily on providing more support for the program managers. The program consists of five major initiative areas, four of them directly supporting the program managers in doing their jobs, while the fifth directly supports the MAISRC principals.

First, we are establishing an independent group of highly qualified experts who will be available to our program managers. This team will help them spot holes, risks, or new options to be considered in the program manager's planning.

Second, we have already distributed examples of the MAISRC planning documents that should help the program managers to target their deliverable planning products.

Third, we are clarifying and amplifying the existing policy guidance to ensure that the program manager's analyses and plans clearly address the most important issues.

Fourth, as part of the education initiative, we are establishing a joint service ADP program managers' forum, as a means for the program managers to exchange ideas and solutions to their problems. The first program managers' forum was held on March 6, 1986, and was attended by more than 30 senior DoD ADP program managers. Another element of this initiative is to strengthen the education available for our program managers.

Fifth, we are incorporating specialized independent reviews of the ADP program cost estimates and the test and evaluation programs, as direct support to the MAISRC principals.

Taken together, these efforts should strengthen the quality and effectiveness of our DoD ADP program managers and the OSD ADP oversight process itself.

When we were last before this subcommittee, we indicated that DoD was making progress in increasing the level of competition in its acquisition of ADP equipment (ADPE). There continues to be a positive shift in our rate of competition for ADPE.

Based on dollars spent for ADPE, the level of our competitive procurement for fiscal year 1985 has increased by 28 percent when compared with fiscal year 1984. More specifically, we competed 51 percent of our ADPE procurements in fiscal year 1985, up from 40 percent in fiscal year 1984.

This progress is a direct result of our initiatives to encourage the proper use of the Commerce Business Daily announcements, more accurate requirements definition, improved acquisition planning, and close adherence to the principles of the Competition in Contracting Act.

We indicated last year that the inventory data base contained a total of nearly 28,000 computers as of the first quarter of fiscal year 1985. This year, after numerous transactions to keep the data base current, the inventory contains almost 41,500 computers, valued at over $5.6 billion.

Additionally, to help improve the quality of the inventory data that are received from our field elements, we published a new DoD Manual 7950.1 in August 1985.

We reported last year that we had just developed an ADP Internal Control Guideline. We are able to report continuing progress on getting management attention to the controls that need to be implemented in their ADP systems.

Nearly 2000 copies of the guideline have been distributed to the users of large computer systems, as well as to the microcomputer users. Internal control reviews are being performed in the major data processing centers and in office environments as well.

We have begun to work with the DoD Computer Institute to establish a training course to teach managers ADP system controls. We plan to continue these important efforts to ensure that both our ADP managers and functional managers will understand what is required in this area and perform accordingly.

Consistent with your guidance in fiscal year 1984, we continue our aggressive program to buy ADPE which is more economical to purchase than to lease within DoD. Our current plan indicates that we will be able to complete our O&M buy-out a full year ahead of schedule by the end of fiscal year 1987.

Our fiscal year 1987 O&M request for leased ADP systems has declined by approximately 60 percent from our corresponding fiscal year 1984 request. Additionally, our plan will achieve cost avoidances of approximately $1.2 billion over the remaining life cycle of these items being purchased.

With our continued emphasis on purchasing ADPE, we have seen a corresponding rise in our request for procurement funds between fiscal year 1984 and fiscal year 1987. Declining O&M requests and increasing procurement funding clearly demonstrate DoD's success in buying out our uneconomical leases and in avoiding new leases. We have already taken the necessary steps to expand the buy-out to all appropriations and funds and to include our word processing and office information systems in the buy-out program.

Additionally, we have taken action to begin in fiscal year 1986 the buy-out of equipment leased in Research, Development, Test, and Evaluation (RDT&E) and industrial fund accounts. This portion of our buy-out is planned for completion in fiscal year 1988.

We anticipate that this effort will result in additional cost avoidances of approximately $70 million giving a total of nearly $1.3 billion in cost avoidances for the entire buy-out program.

As a result of your report, which expressed concern that there were potential inconsistencies in OSD oversight of our general purpose ADPE, the OSD has consolidated the management oversight responsibility for all our general purpose ADPE, including the Warner Amendment general purpose systems, under the policy cognizance of the Assistant Secretary of Defense (Comptroller).

This management structure will allow the Department to provide consistent and objective OSD management oversight of all general purpose computer systems.

In addition to this consolidation, we have taken steps to implement the necessary stronger management controls to ensure that our major ADP programs are identified for OSD review prior to the expenditure of significant funds. We have accomplished this by requiring the early identification of new starts and by limiting fund expenditure until the systems have been reviewed.

Mr. Chairman, although we have moved to strengthen the OSD oversight process, we must be careful not to fall into the trap of believing that all ADP programs should or could be managed at the OSD level. OSD oversight is not a viable substitute for direct DoD Component management.

OSD involvement is most appropriate at the very early stages of an ADP project when dealing with topics such as needs approval, acquisition strategy, and alternative conceptual designs. If we impose too many OSD management controls during the system implementation phase, we will needlessly slow down and complicate the fielding of essential ADP systems.

OSD's major challenge is to ensure that effective DoD Component management processes are in place and staffed by qualified, experienced personnel. We have developed a firm set of criteria that helps them to understand our expectations for their oversight process. This will result in an appropriate balance between systems reviewed by OSD and those that have been fully delegated to and are managed by the DoD Components.

In cooperation with your staff, we have already taken steps to improve our fiscal year 1987 ADP budget justification material. We will also be working with your staff on any additional improvements that need to be made in fiscal year 1988.

Mr. Chairman, last year this subcommittee also requested that DoD study the extent of our software obsolescence within the Department. Software obsolescence describes a condition when our computer programs can no longer take advantage of the technical capabilities inherent in new computer equipment, become difficult and costly to maintain, and constrain our options for implementing management improvements.

We are currently developing plans to use the services of a Federal Contract Research Center to develop the information which you have requested, and to create a framework for a continuing software modernization program in the Department. In order to develop an effective program, we need to establish criteria to be used as the basis of our software obsolescence evaluation.

Then we plan to use these criteria to sample DoD's systems to get a baseline starting point for our analyses. Realistically, we believe it will take an additional year beyond January 1987 to complete these efforts.

The conference report also requires that additional action be taken in such areas as ADP procurement training, local area networks, and logistics systems. I would like to submit for the record, our report to the Congress as required by Conference Appropriations Committee Report 99-450 on the DoD Appropriations Bill, FY 1986.

In summary, the Department has made significant progress regarding each of the concerns raised by this subcommittee during the fiscal year 1986 ADP hearings. The initiatives which have been put in place will help streamline, as well as strengthen, the acquisition and management of all general purpose ADPE within the Department.

However, Mr. Chairman, it is essential to recognize that OSD management oversight is not an effective substitute for improved, direct management at the DoD Component level.

All DoD Components have been directed to implement the principles of life cycle management when acquiring or developing any general purpose ADP program, to strengthen their own executive ADP management processes, and to work with us to improve the training and education of all DoD ADP program managers.

These actions will lead to significant management improvements and result in an appropriate balance between systems reviewed by OSD and those directly managed by the DoD Components.

Mr. Chairman, I would be glad to address any questions that you may have or those of the members of your subcommittee, sir.

Mr. CHAPPELL. Thank you, Mr. Springett. Your statement will be placed in the record at this point.

[The statement of Mr. Springett follows:]

STATEMENT BY THE ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER)

Mr. Chairman and members of the Subcommittee, last year the Conference Committee requested that I appear before you during the FY 87 Appropriations hearings and demonstrate that the Department has taken aggressive action to strengthen its management and oversight of general purpose Automatic Data Processing (ADP). I believe the Department of Defense (DoD) has a good story in that regard and I would like to present it to you briefly in the next few minutes.

I am accompanied today by the Department's Director for Information Resources Management (IRM) Systems, Mr. John Springett, who you may recall, appeared before you last year to discuss the management of DoD general purpose computers.

As the DoD senior IRM official, I am responsible to Secretary Weinberger for the development of Defense-wide ADP management policy. The Department's general purpose ADP systems are essential in supporting the everyday business functions of the Defense Department, such functions as payroll, personnel management, logistics, finance and accounting, and resource management.

ADP Management Policy.

I believe that our life cycle management policies represent a solid foundation for managing both large information system projects and office automation systems. The life cycle management process uses a predetermined sequence of key decision milestones. ADP program advancement is approved or disapproved at each milestone. The significant elements of life cycle management are (1) early planning, (2) executive oversight, (3) early determination of costs, and (4) accountability.

Acquisition Improvement.

We are constantly taking steps to improve the quality of our management review process for major automated information systems. Recently, we observed a number of issues coming to our principal oversight mechanism, the Major Automated Information System Review Council (MAISRC), which should have been resolved earlier. As a result of the late detection of these problems, the progress of the programs affected was interrupted while we resolved them.

A policy analysis was conducted to determine the source of these problems. The goal was to identify the actions necessary to strengthen the management of our programs and to accelerate the overall process of ADP system acquisition. During the course of our analysis, we worked closely with the ADP program managers and the Military Department staffs in defining the problems and developing the proposed solutions.

The study revealed two important concerns. First, the difficulties observed concerned the comprehensiveness and quality of specific, needed program tasks, rather than with the acquisition process itself. While our policies and procedures are clear, the people charged with the tasks were having implementation difficulties. Secondly, and related to the first concern, deficiencies in the experience or education of the program management staffs contribute significantly to the problems and delays in successfully completing these program tasks.

This past November, in coordination with the Military Departments, I approved a program that focuses primarily on providing more support for the program managers. The program consists of five major initiative areas, four of them directly supporting the program managers in doing their jobs, while the fifth directly supports the MAISRC principals.

First, we are establishing an independent group of highly qualified experts who will be available to our program managers. This team will help them to spot holes, risks, or new options to be considered in the program manager's planning.

Second, we have already distributed examples of the MAISRC planning documents that should help the program managers to target their deliverable planning products.

Third, we are clarifying and amplifying the existing policy guidance to ensure that the program manager's analyses and plans clearly address the most important issues.

Fourth, as part of the education initiative, we are establishing a joint service ADP program managers' forum, as a means for the program managers to exchange ideas and solutions to their problems. The first program managers forum was held on March 6, 1986, and was attended by more than 30 senior DoD ADP program managers. Another element of this initiative is to strengthen the education available for our program managers.

Fifth, we are incorporating specialized independent reviews of the ADP program cost estimates and the test and evaluation programs, as direct support to the MAISRC principals.

Taken together, these efforts should strengthen the quality and effectiveness of our DoD ADP program managers and the Office of Secretary of Defense (OSD) ADP oversight process itself.

Competition.

Mr. Chairman, when we were last before this Subcommittee, we indicated that DoD was making progress in increasing the level of competition in its acquisition of ADP Equipment (ADPE). There continues to be a positive shift in our rate of competition for ADPE. Based on dollars spent for ADPE, the level of our competitive procurement for FY 85 has increased by 28% when compared with FY 84. More specifically, we competed 51% of our ADPE procurements in FY 85, up from 40% in FY 84.

Similarly, for Office Information Systems, the level of our competitive procurement for FY 85 has increased by over 59% when compared with FY 84. Specifically, we competed 43% of these procurements in FY 85, up from 27% in FY 84.

This progress is a direct result of our initiatives to encourage the proper use of the Commerce Business Daily announcements, more accurate requirements definition, improved acquisition planning, and close adherence to the principles of the Competition in Contracting Act.

ADPE Inventory.

We indicated last year that the inventory data base contained a total of nearly 28,000 computers as of the first quarter of FY 85. This year, after numerous transactions to keep the data base current, the inventory, at the end of FY 85, contains almost 41,500 computers valued at over $5.6 billion. Additionally, to help improve the quality of the inventory data that are received from our field elements, we published a new DoD Manual 7950.1 in August 1985. This personnel can use in updating their inventory information. This information is the basis for further ADPE resource analyses and technological trend analyses within the Department.

ADP System Controls for Automated Systems.

We reported last year that we had just developed an ADP Internal Control Guideline for use by both ADP and functional managers in assessing their ADP system vulnerabilities. This year we are able to report continuing progress on getting management attention to the controls that need to be implemented in their ADP systems.

Nearly 2000 copies of the Guideline have been distributed to the users of large computer systems, as well as to the microcomputer users. All three Military Departments are training their ADP managers and users on performing vulnerability assessments and internal control reviews. Internal control reviews are being performed in the major data processing centers and in office environments, as well.

It is very important that we make every effort we can to protect our information resources. We have begun to work with the DoD Computer Institute to establish a training course to teach managers what ADP system controls they must consider when developing, implementing, and maintaining their ADP systems. We plan to continue these important efforts to ensure that both our ADP managers and functional managers will understand what is required in this area and perform accordingly.

End User Computing.

Another area that continues to receive our management attention is the introduction of desktop computer technology. We are proceeding with what we believe is a well thought out program for the acquisition and use of this new and emerging technology. For example,

(1) Large numbers of DoD personnel are now trained in the use of desktop computers.

(2) Technical advice and assistance groups have been established throughout the Department and are helping new users to make the right choices for their systems.

(3) Formal user groups are helping to identify and resolve problems in the use and operation of this type of system. These developments are rapidly creating a knowledgeable and effective use of this technology by the Department's workforce.

The continuing decline in computer costs is opening new opportunities for applications of technology which can lead to significant personnel productivity increases. The areas of wide usage include budget planning and management, financial and investment analyses, audit support, statistical analyses, and program management resource estimating and task monitoring.

We have also been emphasizing the use of large-volume, competitively awarded hardware and software contracts to promote standardization, compatibility, and procurement cost savings, and to reduce the administrative burden involved in awarding contracts. The Air Force has undertaken a new competitive, microcomputer acquisition to be used by all of the DoD Components. To date, these acquisitions have resulted in savings of up to 60% off the market list price.

Congressional ADP Guidance.

Lease Purchase Program.

Consistent with your guidance in FY 84, we continue our aggressive program to buy ADPE which is more economical to purchase than to lease within DoD. Our goal was to complete the buy-out of all uneconomically leased ADPE in our Operations and Maintenance (O&M) accounts by the end of FY 88. Our current plan indicates that we will be able to complete our O&M buy-out a full year ahead of schedule by the end of FY 87.

Our FY 87 O&M request for leased ADP systems has declined by approximately 60% from our corresponding FY 84 request. Additionally, our plan will achieve cost avoidances of approximately $1.2 billion over the remaining life cycle of these items being purchased.

With our continued emphasis on purchasing ADPE, we have seen a corresponding rise in our request for procurement funds between FY 84 and FY 87 of $766 million. Declining O&M requests and increasing procurement funding clearly demonstrate DoD's success in buying out our uneconomical leases and in avoiding new leases. We have already taken the necessary steps to expand the buy-out to all appropriations and funds and to include our word processing and office information systems in the buy-out program.

Additionally, we have taken action to begin in FY 86 the buy-out of equipment leased in Research, Development, Test, and Evaluation (RDT&E) and industrial fund accounts. This portion of our buy-out is planned for completion in FY 88. We anticipate that this effort will result in additional cost avoidances of $70 million giving a total of nearly $1.3 billion in cost avoidances for the entire buy-out program.

Office of the Secretary of Defense (OSD) Oversight.

As a result of your report, which expressed concern that there were potential inconsistencies in OSD oversight of our general purpose ADPE, the OSD has consolidated the management oversight responsibility for all our general purpose ADPE, including the Warner Amendment general purpose systems, under the policy cognizance of the Comptroller's office. This management structure will allow us to provide consistent and objective OSD management oversight of all our general purpose computer systems. In addition to this consolidation, we have taken steps to implement the necessary stronger management controls to insure that our major ADP programs are identified for OSD review prior to the expenditure of significant funds. We have accomplished this by requiring early identification of new starts and by limiting fund expenditure until the systems have been reviewed.

Mr Chairman, although we have moved to strengthen the OSD oversight process, we must be careful not to fall into the trap of believing that all ADP programs should or could be managed at the OSD level. OSD oversight is not a viable substitute for direct DoD Component management. OSD involvement is most appropriate at the very early stages of an ADP project when dealing with topics such as needs approval, acquisition strategy, and alternative conceptual designs. If we impose too many OSD management controls during the system implementation phase, we will needlessly slow down and complicate the fielding of our essential ADP systems.

OSD's major challenge is to ensure that effective DoD Component management processes are in place and staffed by qualified, experienced personnel. We have developed a firm set of criteria that helps them to understand our expectations for their oversight process. This will result in an appropriate balance between systems reviewed by OSD and those that have been fully delegated to and are managed by the DoD Components.

Improved Budget Documentation.

In cooperation with your staff, we have already taken steps to improve our FY 87 ADP budget justification material. We will also be working with your staff on any additional improvements that need to be made in FY 88.

Headquarters Automation.

Headquarters Automation is that set of ADPE and office automation systems, used by the Military Departments and OSD, within the Pentagon, to help manage our day-to-day business and financial activities. The Conference Committee expressed the view that OSD should initiate those actions necessary to ensure appropriate standardization and coordination of all Headquarters Automation efforts. We have directed the Military Departments:

(1) To strengthen and coordinate their headquarters automation plans and programs to ensure that all headquarters automation efforts are well defined, achieve the highest practical level of system standardization and data compatibility, avoid duplication, and facilitate cost effective, competitive acquisition.

(2) To work with existing groups and support organizations as a means of sharing ideas and experiences and seeking resolutions to their common problems.

Software Obsolescence.

Mr. Chairman, last year this Subcommittee also requested that DoD study the extent of our software obsolescence within the Department. Software obsolescence describes a condition when our computer programs can no longer take advantage of technical capabilities inherent in new computer equipment, become difficult and costly to maintain, and constrain our options for implementing management improvements. We are currently developing plans to use the services of a Federal Contract Research Center to develop the information which you have requested, and to create a framework for a continuing software modernization program in the Department. In order to develop an effective program, we need to establish criteria to be used as the basis of our software obsolescence evaluation. Then we plan to use these criteria to sample DoD's systems to get a baseline starting point for our analyses. Realistically, we believe it will take us another year to complete these efforts.

Other Congressionally Directed Actions.

The Conference Report also requires that additional action be taken in such areas as ADP procurement training, local area networks, and logistics systems. We plan to report the status of our efforts in these areas in our April 15, 1986 report to the Congress.

Conclusion.

In summary, the Department has made significant progress regarding each of the concerns raised by this subcommittee during the FY 86 ADP hearings. The initiatives which have been put in place, will help streamline, as well as strengthen, the acquisition and management of all general purpose ADPE within the Department. However, Mr. Chairman it is essential to recognize that OSD management oversight is not an effective substitute for improved, direct management at the DoD Component level. All DoD Components have been directed to implement the principles of life cycle management when acquiring or developing any general purpose ADP program, to strengthen their own executive ADP management processes, and to work with us to improve the training and education of all DoD ADP program managers. These actions will lead to significant management improvements and result in an appropriate balance between systems reviewed by OSD and those directly managed by the DoD Components.

COMPUTER POLICY AND OVERSIGHT

Mr. **CHAPPELL**. In February 1986, the Department consolidated the policy responsibility for all DOD general-purpose ADP systems under the Comptroller. The Under Secretary of Defense for Research and Engineering will continue to provide policy for computers embedded in weapon systems.

Mr. Springett, who will be responsible for overall policy guidance and direction for computer technology in DOD?

Mr. **SPRINGETT**. Mr. Chairman, today there are two offices within OSD involved in computer technology. As you mentioned, the Under Secretary for Research and Engineering is responsible for that special-purpose computer technology which is used as an integral part of our weapons systems. Such systems include avionics, fire control systems, navigation systems.

Based on Mr. Taft's decision of February 20 to consolidate all general-purpose ADP policy oversight, the Comptroller is now the Senior Policy Official for all general-purpose ADP within the Department.

Mr. **CHAPPELL**. That means now we have one policy office or we still have two separate policy offices?

Mr. **SPRINGETT**. We still have two, sir, but the computer technology, which is being overseen by Research and Engineering is primarily that which is developed and placed into a weapons system It is not equipment that is commercially available off the shelf. The Comptroller has full responsibility for all that general purpose ADP that is commercially available.

Although it is all computer technology, it is quite a bit different, not only in its use, but in terms of how much research and development is sponsored by the government.

Research and development for weapons system technology, of course, is helpfully sponsored by the government. We do not sponsor research and development for general-purpose systems used for logistics, for personnel, or for any other resource management activities.

Mr. **CHAPPELL**. So you feel that the system you have is not bringing about inconsistency of management and ineffective management insofar as policy is concerned?

Mr. **SPRINGETT**. No, sir. What we have, I believe, is a well-reasoned position. We had some confusion before where there was multiple involvement in general-purpose ADP. I think that was what the committee pointed out last year and that is what we moved to resolve.

We feel that the way it is structured now removes any inconsistencies.

Mr. **CHAPPELL**. Does the management consolidation for all DOD general-purpose ADP systems under the Comptroller mean that general-purpose ADP systems acquired under the Warner amendment will now be reviewed by DOD using the Major Automated Information Systems Review Council?

Mr. **SPRINGETT**. That is correct, sir.

Mr. **CHAPPELL**. Is the Computer Resources Council still in existence or has it been disbanded?

Mr. SPRINGETT. Mr. Chairman, I can't really comment on what is happening to the Computer Resources Council. I can say Mr. Helm has put out a letter based on Mr. Taft's decision, which has made it clear that the MAISRC will review all general-purpose ADP, whether it is procured under the Warner amendment or not.

There may be other activities—

Mr. CHAPPELL. You are saying MAISRC will make the review on all of them?

Mr. SPRINGETT. Absolutely, sir.

Mr. CHAPPELL. Regardless of what happens with the council, right?

Mr. SPRINGETT. Yes, sir.

MANAGEMENT OVERSIGHT BY DOD COMPONENTS

Mr. CHAPPELL. Does each service and DOD agency currently have a single, consolidated, integrated management process for general-purpose computers which mirrors the new OSD structure?

Mr. SPRINGETT. Not today, no, sir. Mr. Helm, in his recent letter to the military departments, indicated that he expected there would be a single body which would review all general-purpose ADP within the military departments. I don't believe that they have had an opportunity to be sure they are in place yet, but that clearly is the intent. It is absolutely necessary that we provide more opportunities to delegate systems to the military departments.

Mr. CHAPPELL. You are saying the intent is to consolidate ADP policy below the OSD level?

Mr. SPRINGETT. Certainly from the review standpoint, yes, sir.

COMPETITION

Mr. CHAPPELL. Your statement, Mr. Springett, makes a good case that the Department has greatly increased competition in ADP procurements. In fiscal year 1982, less than one third of ADP acquisitions were competitive, while in fiscal year 1985 about one half were.

Mr. Springett, what has caused increased ADP competition in the Defense Department?

Mr. SPRINGETT. I don't think we should put an upper limit on it. We should strive for as much competition as we can get, and that results in lower overall cost to the government. The Comptroller plans to push the policies he has put in place as a base line and try to improve each year.

Mr. CHAPPELL. Well, if we have primarily off-the-shelf commercial computers—that is what we have, isn't it?

Mr. SPRINGETT. Yes, sir.

Mr. CHAPPELL. Why does the Department not compete everything? Is that impractical or impossible?

Mr. SPRINGETT. Well, sir, there are situations in which it is frankly not cost-effective to compete, or the time limit puts us in a position where we need a piece of equipment for national security purposes immediately and it becomes a difficult thing to compete.

In some cases, the particular computer technology may only be offered by one vendor and it is necessary to go to that one vendor.

ARMY'S LOW RATE OF ADP COMPETITION

Mr. **CHAPPELL**. Why is the Army's level of competition so much lower than the other two services? I understand it is about 43 percent while the Navy is 57 percent and the Air Force is 59 percent. Any particular reason why the Army has such a low level of competition?

Mr. **SPRINGETT**. Well, sir, I don't know of a particular reason. I know that it has been clearly brought to the Army's attention that their level of competition was low and should be improved. Mr. Helm has brought that to the attention of the Assistant Secretary of the Army for Financial Management. I think if we look back at the figures for fiscal year 1985, although Army's total for the year was, I think, 43 percent or significantly lower, they have made progress in the last two quarters of the year.

I believe they are working on it; however, I think they have more to do. We are going to help them to ensure that they do increase that competition and get it right up there.

If we look at the last two quarters of the fiscal year, I believe they were somewhere at 55 and 56 percent, so they are making some progress. What is important is that that progress be maintained and not slip back to where it was earlier in the year.

Mr. **CHAPPELL**. And in your official capacity, you will be pushing the Army to get more competition?

Mr. **SPRINGETT**. Certainly. The Comptroller has the policy that we review competition statistics every quarter. Based on that review, he provides specific policy guidance in the areas where we see the competition is low. That policy for review of statistics is going to continue.

PENTAGON AUTOMATION

Mr. **CHAPPELL**. The committee expressed concern in the 1986 mark-up over the Pentagon automation programs. Through 1991, the current budget forecasts $268 million for Pentagon ADP projects: $24 million for Army corporate data base; $61 million for Army headquarters integrated office system; $11 million for Navy office automation and communications system; and $172 million for Air Force office automation, pre-planned enhancement, and improved services program.

Mr. Springett, what action have you taken to integrate these programs and reduce redundancy between the services?

Mr. **SPRINGETT**. Mr. Chairman, recently the Assistant Secretary of Defense (Comptroller) did issue policy guidance to the three military departments, Office of JCS, and to the Director of Washington Headquarters Service. They are to look at these specific issues in order to integrate and increase our ability to be able to communicate, make the systems more compatible, and seek methods to assure that we have, in fact, reduced redundancy.

In those particular areas, he has asked that headquarters level automation be highlighted in the annual ADP plans of the military departments and be addressed clearly.

Also, he has asked the military departments and OSD specifically to define a point of primary responsibility for the implementation of those plans.

Mr. **Chappell**. You don't depend just on issuing of policy instructions, are you, to get the job done?

Mr. **Springett**. Well, sir, I think in this case that a policy issuance with an appropriate follow-up is going to be the right way to do it.

Mr. **Chappell**. The follow-up is important. I know it will take a lot of follow-up, right?

Mr. **Springett**. Yes, sir. I think it will, but it is something that needs to be done, and we will try to follow up on it, but I think in the first place this is the kind of technology that the military departments function as the user for. They have to be committed to manage it properly and should be able to manage it properly within their own organizations.

I think if we follow up we will achieve the proper goals.

Mr. **Chappell**. We are talking here about commercial, off-the-shelf equipment, aren't we?

Mr. **Springett**. Yes, sir.

Mr. **Chappell**. Is it not feasible for the services to use one system?

Mr. **Springett**. Well——

Mr. **Chappell**. Does that get you to a situation where you will reduce competition because of the fact you get hooked into a system and it is difficult to change?

Mr. **Springett**. I think you could get into that situation of reducing competition, but I would say there are opportunities where the same equipment can be used by the military departments. As an example of that, the Air Force is proceeding ahead to issue or has actually awarded a contract for micro computers. Those are the small computers you can have on your desk for local computing purposes. That contract will be available not only to the Air Force, but also to the Army and to the Navy, as well as OSD and all the defense agencies.

So there we have an opportunity to be able to save money by reducing the unit order price significantly and reducing the administrative processes that it requires to get the procurement completed. I think it gives us an excellent opportunity for standardization. So we have used that where we believe it is appropriate.

Mr. **Chappell**. Have you or anyone at your level at OSD ever conducted an in-depth review of Pentagon office automation?

Mr. **Springett**. To my knowledge, sir, we have not.

Mr. **Chappell**. Would it be helpful? Would it be meaningful?

Mr. **Springett**. I think the approach that we have underway, sir, to see that the issues are addressed in the ADP planning processes of each of the military departments for the first time we are moving ahead to get a consolidated OSD plan, I think this would be the most effective way to approach it in the long run.

Mr. **Chappell**. Mr. McDade?

OSD Response to Committee Recommendations

Mr. **McDade**. Thank you, Mr. Chairman.

I want to offer my commendation to you and your associates for responding to the problem areas the committee pointed out to you. I think you have been very responsive and you are trying to get a very difficult and complex problem under control. You are showing progress with it.

We want to encourage you to keep that up and in the other areas you have been talking about to our staffs, keep that up as well.

Mr. **Springett**. Yes, sir.

Mr. **McDade**. With that, Mr. Chairman, and because you are taking the bull by the horns and following what we are suggesting and making the shop work more efficiently, I don't have any more questions to ask you. We will be watching you. Keep doing the right job. That is all we ask you to do.

Mr. **Springett**. Thank you very much.

Mr. **McDade**. Thank you, Mr. Chairman.

DOD ADP REPORT TO CONGRESS

[CLERKS NOTE.—DOD's report to the Congress on ADP management improvements follows:]

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D.C. 20301

COMPTROLLER

15 APR 1986

Honorable Jamie L. Whitten
Chairman, Committee on Appropriations
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This letter and accompanying report are submitted in response to Conference Appropriations Committee Report 99-450, Department of Defense Appropriations Bill, FY 1986.

The committee asked the Department to submit a report by April 15, 1986, on the internal management systems being put in place to meet the congressional guidance on specifically tasked areas in the management of general purpose automatic data processing (ADP).

The attached report shows that the Department has moved very aggressively in meeting the committee's requirements. Of the items reported on, seven have already been implemented and action is underway on the remaining three areas. I will continue a strong program to support these areas of congressional interest. At the same time, I am continuing other internal initiatives to strengthen the management of ADP in the Department of Defense.

Sincerely,

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

Enclosure

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D C 20301

COMPTROLLER

15 APR 1986

Honorable Mark O. Hatfield
Chairman, Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This letter and accompanying report are submitted in response to Conference Appropriations Committee Report 99-450, Department of Defense Appropriations Bill, FY 1986.

The committee asked the Department to submit a report by April 15, 1986, on the internal management systems being put in place to meet the congressional guidance on specifically tasked areas in the management of general purpose automatic data processing (ADP).

The attached report shows that the Department has moved very aggressively in meeting the committee's requirements. Of the items reported on, seven have already been implemented and action is underway on the remaining three areas. I will continue a strong program to support these areas of congressional interest. At the same time, I am continuing other internal initiatives to strengthen the management of automatic data processing in the Department of Defense.

Sincerely,

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

Enclosure

MANAGEMENT OF GENERAL PURPOSE AUTOMATIC DATA PROCESSING RESOURCES

A

REPORT TO CONGRESS

ON

MANAGEMENT REFORMS

Submitted by the Department of Defense
Assistant Secretary of Defense (Comptroller)

To the Conference Committee on Appropriations

April 15, 1986

BACKGROUND

The FY 1986 Conference Committee on Appropriations Report 99-450, requested that the Department of Defense report on the implementation of its management system to address the following issues:

	TAB
--Delegation of Oversight Authority,	A
--New Starts of Major Automated Information Systems,	B
--Logistics Systems,	C
--Lease/Purchase Criteria,	D
--Buyout of Uneconomical ADP Leases Funded in Operating Appropriations,	E
--Buyout of Uneconomically Leased Office Automation Equipment,	F
--Pentagon Automation,	G
--ADP Acquisition Training,	H
--Local Area Networks and	I
--Software Obsolescence.	J

DELEGATION OF OVERSIGHT AUTHORITY

House Appropriations Committee Report 99-332, Pages 24-25
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The Committee believes that when a program is delegated, the component HQ should exercise the same degree of aggressive and efficient oversight as OSD. OSD should have a firm set of criteria for determining the conditions under which a delegation should be revoked.

RESPONSE

The Department of Defense has taken several actions over the past year to increase emphasis on the quality of oversight performed by the components.

Primarily, the Assistant Secretary of Defense (Comptroller) has developed and published criteria to be used in determining if previously delegated authority should be withdrawn. These criteria have been developed in such a manner that they can be used to evaluate both program stability and the effectiveness of the oversight being performed by the component. This results in a framework which:

- Sets thresholds for cost and schedule growth.
- Requires that an executive review process be in place.
- Places emphasis on program planning, resourcing and execution
- Focuses attention on significant unresolved program issues.

The criteria were published in an April 2, 1986 ASD(C) memorandum (see enclosure 1).

Second, the Components have been asked to have an accountable, executive level review process in place and operating. This will help to assure that the requirements are valid and current, that the acquisition strategy is sound and that program cost and schedule performance is being monitored. In addition, with the consolidation of OSD oversight responsibility, all general purpose ADP is now expected to follow Life Cycle Management Policy. These actions were tasked in ASD(C) memorandum, dated March 26, 1986 (see enclosure 2).

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON DC 20301

COMPTROLLER

2 APR 1986

MEMORANDUM FOR SECRETARIES OF MILITARY DEPARTMENTS
DIRECTORS OF DEFENSE AGENCIES

SUBJECT: Delegation of Oversight Responsibility for Automated Information Systems

In the FY 86 House Appropriations Report, the Congress provided the DoD with specific guidance on Delegation of Oversight Responsibility for systems under review by Major Automated Information System Review Council (MAISRC). Congress indicated that it "expects each component to aggressively adhere" to certain specified management responsibilities and also to "ensure that requirements are valid and controlled, that the proposed program strategy is sound, and that implementation adheres to program schedule and cost goals."

Congress tasked the Office of the Secretary of Defense to establish a firm set of criteria for determining the conditions under which previously delegated management oversight authority should be withdrawn. These criteria are enclosed. They will be used to evaluate both program stability and the effectiveness of the oversight. In addition, it should be recognized that OSD will maintain the prerogative to conduct In-Process-Review(s) on selected programs while the Service or Agency continues its oversight.

Please take immediate steps to communicate these criteria to the appropriate organizations and program managers.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

Enclosure

CRITERIA USED TO SUPPORT DECISIONS ON WITHDRAWAL OF DELEGATED OVERSIGHT AUTHORITY

The criteria listed below are not intended to automatically result in a withdrawal of delegated oversight authority. Rather, a breach of the criteria will cause an OSD staff review of the relevant facts for each criteria area and the overall program situation. The staff findings will be shared with the relevant DoD Component and forwarded to the principals of the Major Automated Information System Review Council (MAISRC) for a decision on whether or not to withdraw the delegation.

1. Program cost growth of 25% or more has developed for the overall program.

2. Program schedule slippage of six months or more has developed for the overall program.

3. The headquarters executive level review process, as required by DoDD 7920.1, has not been adequate.

4. Available program funding is significantly below approved program requirements, making the approved program unexecutable.

5. Significant problems develop in the execution of the acquisition strategy and associated procurement actions.

6. Program planning or execution is in conflict with established DoD policy.

7. Other significant issues have developed which remain unresolved and which jeopardize the success of the program.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

2 6 MAR 1986

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN, JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Management of General Purpose Automatic Data Processing (ADP) Systems

The Deputy Secretary's memorandum of February 20, 1986, directed that my office assume consolidated policy oversight for all general purpose ADP systems. This action was taken to clarify and streamline the OSD ADP management and oversight structure for the Department.

There are three steps which should be taken quickly to begin this consolidation and meet Mr. Taft's guidance. First, all general purpose ADP systems will be expected to follow the Life Cycle Management Policy described in DoDD 7920.1. Second, all major general purpose ADP systems, including Warner exempt systems, subject to OSD review will be reviewed by the Major Automated Information System Review Council. Third, each Component should have an accountable, executive level review process in place and operating which includes full involvement of ADP, telecommunications, and functional management. This review process should be based on the principles of DoDD 7920.1 and should ensure that accelerated acquisitions are achieved by establishing a firm management base for each program. An effective Component oversight process is essential to achieving further streamlining through increased delegations.

While it is not practical to transition immediately ongoing Warner exempt programs to strict adherence to DoDD 7920.1, planning and implementation of this transition must occur as rapidly as possible. Other needed policy adjustments will be developed in the near future including: Warner Amendment determinations, delegations for management of intelligence and cryptographic systems, standards, and programing languages. We plan to act on these areas aggressively, but will do so in conjunction with your staffs.

We will be forwarding shortly, for Component review and comment, the newest list of major automated information systems for OSD and Component oversight. The list will reflect these basic consolidation actions.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense

NEW START OF MAJOR AUTOMATED INFORMATION SYSTEMS

House Appropriations Committee Report 99-332, Page 25
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

Congress requested that DoD refrain from funding any new major ($100M through deployment or $25M in a fiscal year) automated information systems unless explicitly submitted to Congress in a budget submission for that fiscal year. The Committee also wants assurance that proper OSD oversight and reviews will be conducted.

RESPONSE

The Department of Defense has put in place a process to identify new starts and to strengthen the identification of major systems.

On December 26, 1985, the Assistant Secretary of Defense (Comptroller) provided guidance (enclosure 1) to the components which requires that Budget Exhibit 43 (ADP) data be submitted for major system new starts. The necessary internal controls will continue to be centered upon the ADP Exhibit 43 data and Congress will obtain visibility through the additional requested ADP budget justification data (HAC Report, pages 29-30: Senate Appropriations Committee Report Pages 342-343).

In addition, the Assistant Secretary of Defense (Comptroller) published on February 24, 1986, a policy memorandum (enclosure 2) which provides budget guidance on out-of-cycle new starts. It also requires that resources beyond those necessary to document and approve the basic need will not be expended until OSD determines the appropriate oversight level. All major automated information systems new starts will be screened by OSD with management oversight and reviews being retained by OSD or specifically delegated to the components.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON DC 20301

COMPTROLLER

2 6 DEC 1985

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR RESEARCH
AND ENGINEERING
ASSISTANT SECRETARIES OF THE MILITARY
DEPARTMENTS (FM)
DIRECTORS OF THE DEFENSE AGENCIES
DEPUTY ASSISTANT SECRETARY OF DEFENSE
(ADMINISTRATION), OASD(C)
DEPUTY ASSISTANT SECRETARY OF DEFENSE
(INSTALLATIONS), OASD(A&L)

SUBJECT: FY 1987 President's Budget - Justification Books for Congressional Committees

Justification materials in support of the FY 1987 President's budget will be prepared using the guidelines established in the DoD Budget Guidance Manual 7110-1-M and this memorandum.

Justification material must be provided to congressional committees within 15 days following delivery of the President's budget. A concerted effort to meet the scheduling established at Enclosure 1, which is predicated on February 5 as the submission date for the President's budget, must be made by all DoD components. Significant progress has been made in recent years to improve the timeliness of budget justification submissions to congressional committees. The continuation of the gains already made, and your cooperation again this year, will ensure the success of our efforts for the FY 1987 budget as well.

Congressional criticism continues about the use of "boilerplate" with no accompanying up-to-date and relevant information to support the budget request. The use of such "boilerplate" must be avoided; it defeats the credibility of our request.

The enclosures to this memorandum modify or supplement the requirements of the Budget Guidance Manual and outline the scope of the FY 1987 justification book submission.

Robert W. Helm

Enclosures

Schedule for Submission of FY 1987 Justification Material

	Advance to OSD	Return to Service	Ready for Congress
Military Personnel	Feb 03	Feb 07	Feb 14
Operation & Maintenance 1/	Feb 10	Feb 17	Feb 24
Operation & Maintenance Overview 2/	Feb 10	-	Feb 24
Procurement and Stock Fund Justifications	Feb 05	Feb 12	Feb 19
Procurement, Congressional Data Sheets 3/	Feb 10	Feb 17	Feb 24
Procurement, Backup Books 4/	Feb 10	Feb 17	Feb 24
Procurement, Multiyear Justifications 2/	Feb 17	Feb 21	Feb 28
Research, Development, Test and Evaluation	Feb 05	Feb 13	Feb 22
Military Construction, Family Housing, Homeowners'	Feb 03	Feb 07	Feb 14
Intelligence Programs	Feb 14	-	Feb 28
C^3 Programs	Feb 14	-	Feb 28
DoD Chemical Demilitarization Program Justification Book	Feb 10	Feb 17	Feb 24

1/ Defense Agencies: February 4 and 11 as set forth in paragraph 5.e. of Enclosure 2.

2/ Copies and distribution will be made by OASD(C).

3/ Three copies of advance sets.

4/ One advance copy only. After clearance by OASD(C), the following distribution will be made:

- One copy to Mr. Willson of the House Appropriations Committee staff and one copy to Mr. Ladd of the Senate Appropriations Committee staff. (Two copies of APAF)
- One copy to OASD(C), P/B, Procurement Directorate, Room 3D883, Pentagon.
- One copy each to be delivered to the House and Senate Armed Services Committee staffs.

Material should be submitted as specified in Chapter 321 of the Budget Guidance Manual. OASD(C), P/B Directorates and the Directorate of Freedom of Information and Security Review will make every effort to clear drafts within the above scheduled dates. Any revisions to advance sets also must be cleared for security prior to final printing.

Revisions to the above justification material will not be made unless received from the OASD(C), P/B Directorates.

Two additional copies each of the RDT&E Descriptive Summaries and the Procurement Congressional Data Sheets will be submitted directly to USDR&E, Room 3E1014, Pentagon.

Requirements and Scope of FY 1987 Congressional Submission

1. FY 1988 Authorization Estimates. Budgetary data in support of the FY 1988 authorization request will form an integral part of the justification books for the FY 1987 budget request (exceptions will be noted specifically if otherwise). Formats of exhibits, etc., will be modified as indicated to include justifications for the FY 1988 authorization request.

2. Business-type Statements. The Defense Department continues to be exempt from printing most of the business-type statements in the U.S. Budget Appendix; only the Homeowners' Assistance Fund statements are required to be printed. This exemption is contingent upon timely submission of such material to Congress with the justification books. The business-type statements for all other accounts, except Industrial Funds, will be included in the Stock Fund justification books for the Military Departments and in the Defense Stock Fund justification book for the Defense accounts. The Industrial Fund statements will be prepared and submitted by OASD(C) as a separate justification book.

3. Printing of Congressional Justification Books. The printing requirements employed for the last two years will continue to be applicable for the FY 1987 budget. These improvements provided uniform material for handling and production processing by the Defense Printing Service (DPS), thereby reducing turnaround time in the printing process. The following will apply to the preparation of all justification materials, except as may be noted in subsequent paragraphs.

a. Justification books will be printed on both sides of the page.

b. Books will be in the maximum range of about 600-650 pages where possible (300-325 sheets of paper printed on both sides).

c. All books will be printed horizontally (landscape) on 11"x8½" paper and bound on the left side. Addressees will request DPS to reduce all larger pages to the standard 11"x8½" size. All pages in each book are to be consistent in size.

d. Margins on the edge of the finished document to be bound will be 3/4" on all edges. There is no need to use blue-bordered paper.

e. Tabs will be used for Congressional Data Sheets but not for other books unless specified by OSD.

f. ACCO fasteners will not be used except for Congressional Data Sheets and Descriptive Summaries. Either adhesive binding or stapling will be used, whichever is considered most appropriate between DPS and the requesting department.

g. Covers will reflect "February 1986" as the date and will be the following colors:

Army	Green
Navy	Buff
Air Force	Blue
Defense Agencies	White
OSD	White

h. Previous year's procedures provided advance books (40 copies) to be produced in one day so that immediate distribution could be made to congressional committees. The remaining quantities were then delivered three to five days thereafter. This process will continue to be used for the FY 1987 justification books.

4. Military Personnel Justification Books.

a. Applicable instructions and exhibits for preparation of this material are included in Chapter 322 and Appendix A of the Budget Guidance Manual.

b. The FY 1986 column of the FY 1987 President's budget will include a 3 percent military pay raise effective October 1, 1985. The approved FY 1986 pay raise estimates and method of funding are being addressed in the FY 1987 Program/Budget (PBD) review process. It is anticipated, however, that pay raise requirements will be funded through reprogramings.

c. A letter, dated June 25, 1985, signed jointly by the Chairmen of the House and Senate Appropriations Subcommittees on Defense, respectively, requires the Military Personnel Justification Books to itemize requested funding for any requirements due to implementation of section 308, Title 37, U.S.C. This provision allows the inclusion of any unserved period of two years or less of an enlistment extension in computing a reenlistment bonus. This information is to be included in the selective reenlistment bonus section of the justification book.

5. Operation and Maintenance Justification Books

a. Applicable instructions and exhibits for preparation of this material are included in Chapter 323 and Appendix B of the Budget Guidance Manual.

b. Chapter 232 of the Budget Guidance Manual requires automated submission of certain O&M exhibits. The following exhibits will be submitted via 9-track magnetic tape (1600 BPI) or direct data input:

OP-8	Analysis of Civilian Personnel Costs (All Appropriations)
OP-26	POL Consumption and Costs (All Appropriations)
OP-32	Price and Program Growth
PB-18	Foreign Currency Exchange Data
IF-4	Industrial Fund Cost of Operations

c. The requirement for data on consultants, studies and analysis as contained in the Budget Guidance Manual (Exhibits PB-21 and PB-24) have been revised and expanded. This material has been replaced with a new exhibit (Exhibit PB-27) and requirements for Contracted Advisory and Assistance Services (CAAS). Formats and guidance were provided by ASD(C) memorandum of November 7, 1985, subject: Supplementary Budget Guidance for New Exhibit Contracted Advisory and Assistance Services (CAAS). The new material will be incorporated into the next update of the Budget Guidance Manual. The total DoD Exhibit PB-27 will be consolidated and forwarded to the Congress by OASD(C). Components should not include this exhibit in any material that goes to the Congress and should not provide this exhibit directly to the Congress.

d. To be responsive to the House and Senate Appropriations Committee concerns on ADP budget documentation for the FY 1987 budget, it is necessary to improve the Military Department and Defense Agency ADP budget justification material to be submitted with the FY 1987 budget. Thus, each Exhibit 43A will contain a separate explanation summarizing the DoD Components' Information Technology Program (Chapter 2B2 of the Budget Guidance Manual) that highlights new starts, buyout efforts, and initiatives (projects/programs/systems) that influenced the fiscal year budget.

(1) To achieve budget documentation compatibility, the DoD Components and specifically, the Military Departments, will include additional Exhibits 43C, Narrative Statement, and 43A-1, Major Automated Information System (AIS) Cost, for each AIS that meets the dollar thresholds classified as major. The guidance for these exhibits (which were submitted in the fall as IT-43C and IT-43A-1 respectively) is contained in a memorandum signed by the Director, Information Resources Management System, OASD(C), dated July 30, 1985. The definition for "AIS" used in the Exhibit 43A-1 is as defined in DoD Directive 7920.1 or the Budget Guidance Manual and should be followed carefully rather than using Service unique terminology (i.e. projects, programs, etc.). It includes major, nonclassified, Warner amendment systems as well as general purpose Automated Data Processing systems.

(2) Each Exhibit 43B acquisition entry should be organized to track with a corresponding major AIS Exhibit 43A-1. Entries should be referenced using the appropriate AIS title and be grouped together in sequence when there is more than one 43B acquisition entry per major AIS.

(3) Questions concerning this guidance may be referred to Mr. Charles Cardiff, Directorate for Information Resources Management, extension 52554.

e. Defense Agencies should submit Part 2 of Exhibit OP-5 where the budget is prepared at Agency level only. The "Reconciliation of Increases and Decreases" exhibit should contain a narrative description of program increases and decreases. One copy of the exhibits to be included in the budget justification book should be submitted to the Operations Directorate, Room 3D868, Pentagon, on February 4, 1986. This will be marked up as necessary and returned to the Agencies. After corrections are made, an original and two copies should be submitted to the Operations Directorate. The remaining budget exhibits are due on February 10, 1986.

f. The following exhibits will be submitted to the Operations Directorate, Room 3D868, Pentagon, to support data provided in the justification books:

(1) Exhibit OP-27, page 2, Backlog of Maintenance and Repair (BMAR).

(2) Payments to GSA for Standard Level User Charges (SLUC). This exhibit should be prepared in the format of Enclosure 3 for each O&M appropriation that includes SLUC payments. The data are required to provide a basis for current and future SLUC costs. In addition, a copy of OMB Circular A-11 Exhibit 24D should be forwarded to the Operations Directorate.

g. A listing of exhibits for the O&M Overview are contained in Chapter 323, Section 5, and Appendix B of the Budget Guidance Manual, and must be submitted to the Operations Directorate, Room 3D868, Pentagon, by February 10, 1986 in order for the total overview to be completed by February 24, 1986.

6. Procurement Justification Books

a. Instructions and exhibits for preparation of this material are included in Chapter 324 and Appendix C of the Budget Guidance Manual, and are supplemented herein.

b. Backup books for all Procurement appropriations will be provided again to certain congressional committee staff members and the submission dates for these books are included in Enclosure 1.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

24 FEB 1986

MEMORANDUM FOR ASSISTANT SECRETARIES OF THE MILITARY DEPARTMENTS (FM)
DIRECTORS OF DEFENSE AGENCIES
DIRECTOR OF THE JOINT STAFF, OJCS

SUBJECT: Major Automated Information Systems

As part of the FY 86 Conference Report on Appropriations, the Congress directed that DoD establish internal management tools to accomplish several key ADP management objectives. One objective was to ensure that all major, general purpose information systems, including those to be procured under the Warner Amendment, be identified early enough to ensure that appropriate OSD level oversight reviews can be accomplished prior to the expenditure of significant funds.

The guidance provided in my December 26, 1985 memorandum (copy enclosed) will help identify those systems where the resource requirements are known at the time of budget submission. However, for those systems which exceed the DoDD 7920.1 thresholds, and are identified between budget submissions, please immediately submit to my office the system documentation outlined in Enclosure 2, paragraph 5d. of the enclosed memorandum. Early provision of the information will facilitate prompt scheduling of any required oversight review.

Funds beyond those necessary to document and approve the basic functional need for the system should not be expended until OSD has decided whether to retain oversight authority or delegate that responsibility to the Component. This policy is applicable to all new starts as well as major enhancement programs to existing major, general purpose information systems, whether or not they are procured under the provisions of the Warner Amendment. Classified systems are exempt from this requirement.

If you have any additional questions regarding this guidance please contact Mr. Harry Pontius on 697-6954.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

Enclosure

LOGISTICS SYSTEMS

House Appropriations Committee Report 99-332, Pages 25-27
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The Report of the House Appropriations Committee on the Department of Defense Appropriation Bill for FY 1986 observed that a large part of the investment in automatic data processing is to provide for the modernization of logistics ADP systems and to build systems that can communicate and share logistics data. The Committee expects the ASD(A&L) to take the lead policy role for ensuring maximum coordination and compatibility among logistics systems by developing and promulgating minimum standards necessary to achieve this goal. The MAISRC should enforce standards during the development and initial acquisition of logistics ADP systems. The report further notes that the Deputy Assistant Secretary of Defense for Spares Program Management (DASD(SPM)) does not sit on the Major Automated Information Systems Review Council (MAISRC) and states the Committee's belief that this office's participation in the review of logistics ADP systems should be mandatory.

RESPONSE

The ASD(A&L) has been very active in logistics standards and recently has begun a study of ongoing initiatives with the goal of identifying new policies and standards that will be needed to meet the congressional guidance. The study is being conducted to insure that standards being developed in the Government sector (NBS, GSA) and in industry are adopted where appropriate in the Defense logistics community. This study is expected to be completed during the latter part of 1986. The next step will be to further refine plans for integration of these standards efforts and possible new standards so that interoperability can be achieved as early as possible. The MAISRC will enforce these compatibility standards during the review of logistics ADP systems.

The Department agrees with the Committee that the Spares Program Management Office should participate in the review of logistics ADP systems, but we do not believe it is necessary for the DASD(SPM) to be a sitting member of the MAISRC to accomplish this objective.

The Assistant Secretary of Defense for Acquisition and Logistics (ASD(A&L)), or his designated representative, sits on the MAISRC and represents all functional activities within his realm of responsibility, including the Spares Program Management Office. The DASD(SPM) reviews ADP matters coming before the MAISRC and advises the ASD(A&L) as necessary. This allows important ADP decisions to be made at the appropriate level while ensuring thorough review by functional elements.

In an organizational change effective January 1, 1986, Mr. Shriber, DASD(SPM), assumed additional duties as DASD for Logistics. These new duties give him functional responsibility for supply, maintenance, and material distribution. He will retain his current duties as head of the Spares Program Management Office. This change will greatly improve coordination and control over logistics matters and put him in a much better position to review overall logistics ADP requirements.

We appreciate and share your concern for ensuring that spares management is adequately considered in development of logistics ADP systems. As you know, inadequate and outmoded ADP capability has been a major impediment to fully implementing some of our spares initiatives, and we are acutely aware of the pressing need to improve such areas as spares forecasting and technical data management. We can assure you that even though the DASD(SPM) does not sit as a permament member of the MAISRC, he will play an active role in logistics ADP decisions.

LEASE/PURCHASE CRITERIA

House Appropriations Committee Report 99-332, Page 28
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The House directed the Department to establish ADP lease buy-out programs in any appropriations and funds where uneconomical ADP leasing still occurs, including: RDT&E appropriations; industrial funds; and Guard and Reserve appropriations. The Conference Appropriations Committee agreed to waive a separate buy-out report provided the Comptroller of the Defense Department develops the necessary internal management tools to accomplish the objectives of the House report.

RESPONSE

The DoD Components were directed in ASD(C) memorandum of December 23, 1985 (see enclosure) to include in their buy-out plans all uneconomical ADPE leases, irrespective of the appropriation or fund that finances the lease. Beginning in FY 86 and continuing through FY 88, funds have been provided to buy-out uneconomical leases.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

23 DEC 1985

MEMORANDUM FOR ASSISTANT SECRETARIES OF THE MILITARY DEPARTMENTS (FM)
DIRECTORS OF DEFENSE AGENCIES
DIRECTOR, WASHINGTON HEADQUARTERS SERVICES

SUBJECT: Buying Out Uneconomical Leases of Automated Data Processing and Office Automation Equipment

The House Appropriations Committee report on the FY 1986 DoD Appropriation Bill expanded the FY 1984 ADP purchase policies to encompass uneconomically leased ADP, word processing and office automation, in all appropriations and funds. It is essential that you ensure that the congressional and Defense policy is met. Therefore, you must verify that your buy-out planning, financing, and program execution are effective and that the buy-out is complete in all appropriations and funds by the end of FY 1988.

The following actions need to be addressed and initiated immediately in order to execute the congressional guidance:

o In Program Budget Decision (PBD) 685 for FY 1985 you were each provided with necessary resources to complete buy-out of uneconomical O&M leases by the end of FY 1988. To the extent that you have reprogrammed funds in FY 1986 and FY 1987 to meet other than automated data processing equipment goals and uneconomical leases still exist, you will be required to restore up to $50.0 million per year and provide the necessary offsets. Specific direction will be provided in forthcoming PBD action.

o Moreover, in forthcoming PBD action, you will also be required to realign resources for uneconomical leases financed by the RDT&E appropriation. These realignments must be accomplished promptly so that the results can be included in the Department's FY 1987 budget request.

o Additionally, you must take action to identify uneconomical ADP equipment leases financed by industrial funds and complete the buy-out of these uneconomical leases by the end of FY 1988.

As you proceed with executing the buy-out program, first priority is to be given to purchasing existing uneconomical leases. Only after purchasing such uneconomical leases should consideration be given to acquiring new equipment that was not previously leased.

In order to track this DoD-wide program, I will require timely information on your formal plans and actual progress. The Deputy Assistant Secretary of Defense (Management Systems) will contact you during January 1986 to obtain more detailed information on your updated buy-out plans.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

BUY-OUT OF UNECONOMICAL ADP LEASES FUNDED IN OPERATING APPROPRIATIONS AND FUNDS

House Appropriations Committee Report 99-332, Pages 28-29
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The House directed that each Service continue to fund its buy-out program of uneconomical ADP leases in operating appropriations and funds at a level of at least $50.0 million in FY 1986 and future years until the buy-out is completed. The House also requested the OSD to conduct an analysis of the number of exceptions to the ADP lease/buy-out program granted by each Service in FY 1985 and to report the results to the Committee by June 1, 1986. The Conference Appropriations Committee agreed to waive a separate buy-out report.

RESPONSE

The DoD Components were instructed in ASD(C) memorandum of December 23, 1985 (see enclosure) to include in their buy-out plans all uneconomical ADPE leases, irrespective of the appropriation or fund that finances the lease. They were also advised that to the extent that they have reprogrammed funds in FY 1986 and FY 1987 to meet other than ADPE goals and uneconomical leases still exist, they will be required to restore up to $50.0 million per year and provide the necessary offsets.

Additionally, the Office of the Inspector General, DoD, began a DoD-wide audit of the ADP Buy-out Program in March 1986. The validity of the exceptions will be reported as soon as the review is completed.

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

COMPTROLLER

2 3 DEC 1985

MEMORANDUM FOR ASSISTANT SECRETARIES OF THE MILITARY
DEPARTMENTS (FM)
DIRECTORS OF DEFENSE AGENCIES
DIRECTOR, WASHINGTON HEADQUARTERS SERVICES

SUBJECT: Buying Out Uneconomical Leases of Automated Data Processing and Office Automation Equipment

The House Appropriations Committee report on the FY 1986 DoD Appropriation Bill expanded the FY 1984 ADP purchase policies to encompass uneconomically leased ADP, word processing and office automation, in all appropriations and funds. It is essential that you ensure that the congressional and Defense policy is met. Therefore, you must verify that your buy-out planning, financing, and program execution are effective and that the buy-out is complete in all appropriations and funds by the end of FY 1988.

The following actions need to be addressed and initiated immediately in order to execute the congressional guidance:

o In Program Budget Decision (PBD) 685 for FY 1985 you were each provided with necessary resources to complete buy-out of uneconomical O&M leases by the end of FY 1988. To the extent that you have reprogrammed funds in FY 1986 and FY 1987 to meet other than automated data processing equipment goals and uneconomical leases still exist, you will be required to restore up to $50.0 million per year and provide the necessary offsets. Specific direction will be provided in forthcoming PBD action.

o Moreover, in forthcoming PBD action, you will also be required to realign resources for uneconomical leases financed by the RDT&E appropriation. These realignments must be accomplished promptly so that the results can be included in the Department's FY 1987 budget request.

o Additionally, you must take action to identify uneconomical ADP equipment leases financed by industrial funds and complete the buy-out of these uneconomical leases by the end of FY 1988.

As you proceed with executing the buy-out program, first priority is to be given to purchasing existing uneconomical leases. Only after purchasing such uneconomical leases should consideration be given to acquiring new equipment that was not previously leased.

In order to track this DoD-wide program, I will require timely information on your formal plans and actual progress. The Deputy Assistant Secretary of Defense (Management Systems) will contact you during January 1986 to obtain more detailed information on your updated buy-out plans.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

BUYOUT OF UNECONOMICALLY LEASED OFFICE AUTOMATION EQUIPMENT

House Appropriations Committee Report 99-332, Page 29
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The House recognizes that the Department has already begun a plan to buy-out uneconomical leased office automation equipment. The House requested the Comptroller of the Defense Department to fund such office automation separately from the ADPE buy-out plan and separately identify it in future budget requests to Congress. The Conference Appropriations Committee agreed to waive a separate buy-out report.

RESPONSE

The Department believes the purchase policy should be extended to the buy-out of uneconomically leased office automation. However, office automation is already classified as ADP equipment and, as a separate entity, is not distinguishable from the ADP already covered by the earlier FY 1984 congressional direction.

The DoD Components were instructed in PDASD(C) memorandum of February 4, 1985 (see enclosure 1) to include uneconomically leased office automation equipment in their buy-out plans and to complete such buy-out as soon as possible but not later than FY 1987.

This direction was reemphasized in ASD(C) memorandum of December 23, 1985 (see enclosure 2).

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

4 FEB 1985

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
ASSISTANT SECRETARY OF DEFENSE (HA)
ASSISTANT SECRETARY OF DEFENSE (MI&L)
ASSISTANT SECRETARY OF DEFENSE (PA)
INSPECTOR GENERAL
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTOR OF THE JOINT STAFF, OJCS
PRESIDENT, UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
DIRECTORS OF OSD FIELD ACTIVITIES
CLERK OF THE COURT, U. S. COURT OF MILITARY APPEALS

SUBJECT: Congressional Requirements for Acquisition of Leased Information Technology

In its Report No. 98-1086 on the DoD Appropriation Bill for FY 1985, the House Appropriations Committee directed that current ADP acquisition policies be extended to other information technology. The HAC direction as shown in the excerpt at enclosure 1 was later sustained by the committee of conference on the Bill.

Accordingly, the acquisition policies contained in PDASD(C) memorandum of January 16, 1984 and shown at enclosure 2 are extended to word processors and other office automation equipment. These policies are in effect as of February 15, 1985.

The senior Information Resources Management official (or representative in the case of Defense Agencies) should begin immediately to develop an internal plan for the buy out of word processors and office automation equipment that was leased prior to February 15, 1985. Purchase of this equipment should be completed as soon as possible but not later than FY 1987.

John R. Quetsch

John R. Quetsch
Principal Deputy Assistant Secretary of Defense
(Comptroller)

Enclosures

98TH CONGRESS
2d Session

HOUSE OF REPRESENTATIVES

REPORT
98-1086

DEPARTMENT OF DEFENSE APPROPRIATION BILL, 1985

REPORT

OF THE

COMMITTEE ON APPROPRIATIONS

together with

ADDITIONAL VIEWS

[To accompany H.R. 6329]

68

RENTAL OF WORD PROCESSORS

The Air Force is requesting $924,000 to rent word processors for the new Space Command. Despite the fact that the Air Force has found that purchase is the most economically advantageous method to acquire these word processors, it will not buy them outright until FY 1986 and will begin leasing them in FY 1985. The Committee does not endorse this uneconomical management approach which was identified last year with regard to automatic data processing equipment. The Committee is therefore recommending deletion of the full $924,000 in Operation and Maintenance funding, di-

69

recting the Air Force to buy word processors within available procurement funds, and directing a halt to all uneconomical leasing of word processors throughout the Department of Defense. The Committee's guidance with regard to ADP equipment should be applied to word processors which are simply automatic data processing equipment at the lower end of the capability spectrum.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D C 20301

COMPTROLLER

16 JAN 1984

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Congressional Requirements for DoD ADP Equipment Acquisition

Earlier this year GAO and the Investigative Staff of the House Appropriations Committee (HAC) provided study findings indicating that DoD was improperly managing its ADP equipment acquisitions. As a result, the House and Senate jointly agreed to place certain requirements on ADP acquisition and management and did so in their conference report for the DoD Appropriations Act of FY 84. Please note that similar requirements are included in the classified annex of the conference report. Separate similar guidance will be issued by USDR&E (C3I) covering the classified area.

The Military Department senior Information Resource Management (IRM) official (or Defense Agency senior IRM representative) is responsible for carrying out certain requirements in ADP acquisition and management. In coordination with your acquisition and functional managers, the IRM official is required to do the following:

- o Use a purchase acquisition strategy for ADPE unless another approach can be justified on the basis of lowest total overall cost (LTOC). This policy should be effective by January 31, 1984.

- o Achieve LTOC for all ADP acquisitions, normally through competition, unless the acquisition is in support of a time-sensitive program of the highest national priority. Note that acquisition based solely on the use of the GSA ADP schedule is not considered competitive.

- o Plan on replacing within two years any leased ADPE which is obsolete, rather than purchasing such equipment, and identify the necessary resources in the Five Year Defense Program (FYDP).

- Make exceptions to the requirement for competitive procurement and outright purchase strategies only on a case-by-case basis. Justifications for exceptions do not include timeliness or lack of procurement appropriation funds. The senior IRM official may delegate this authority to designees no lower than the major command level, and should be prepared to justify exceptions to Congress on request.

- Develop an up-to-date, accurate inventory of your ADPE with special emphasis on leased equipment and accrued purchase credits. This update must be completed by March 1, 1984. Provide a detailed update of inventory data to the DoD ADP Resource Management System (ARMS) data base. This data base must be consistent with your agency inventory and will be used to form the baseline for developing the buy out plan and preparing congressional testimony. Provide me a summary report of your inventory findings.

Our staffs are working on the remaining requirements, which deal with longer term issues and concern the development of:

- A program to buy out leased ADPE in DoD. Congress provided $150M in the Defense Industrial Fund to begin this buy out initiative. We are developing the procedures to operate this Fund by early February. In addition, we've included procurement funds in the FY 85 budget to be used for further purchases of leased equipment.

- A long-term program for maintaining an accurate ADP resource inventory for use in improving management and in responding effectively to congressional inquiries.

- A comprehensive and immediate training and advisory program to provide contracting officers with the necessary expertise in ADP procurement.

Your support and that of the senior IRM official/representative are essential for the success of all these programs. Additional guidance will be provided as the programs are further developed. Your ideas will be solicited. If you have any questions please contact Mr. William Leary at 695-2554 or Ms. Diane Carroll at 697-~~8637~~.
8632

John R. Quetsch
Principal Deputy Assistant Secretary of Defense
(Comptroller)

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

COMPTROLLER

23 DEC 1985

MEMORANDUM FOR ASSISTANT SECRETARIES OF THE MILITARY
DEPARTMENTS (FM)
DIRECTORS OF DEFENSE AGENCIES
DIRECTOR, WASHINGTON HEADQUARTERS SERVICES

SUBJECT: Buying Out Uneconomical Leases of Automated Data Processing and Office Automation Equipment

The House Appropriations Committee report on the FY 1986 DoD Appropriation Bill expanded the FY 1984 ADP purchase policies to encompass uneconomically leased ADP, word processing and office automation, in all appropriations and funds. It is essential that you ensure that the congressional and Defense policy is met. Therefore, you must verify that your buy-out planning, financing, and program execution are effective and that the buy-out is complete in all appropriations and funds by the end of FY 1988.

The following actions need to be addressed and initiated immediately in order to execute the congressional guidance:

o In Program Budget Decision (PBD) 685 for FY 1985 you were each provided with necessary resources to complete buy-out of uneconomical O&M leases by the end of FY 1988. To the extent that you have reprogrammed funds in FY 1986 and FY 1987 to meet other than automated data processing equipment goals and uneconomical leases still exist, you will be required to restore up to $50.0 million per year and provide the necessary offsets. Specific direction will be provided in forthcoming PBD action.

o Moreover, in forthcoming PBD action, you will also be required to realign resources for uneconomical leases financed by the RDT&E appropriation. These realignments must be accomplished promptly so that the results can be included in the Department's FY 1987 budget request.

o Additionally, you must take action to identify uneconomical ADP equipment leases financed by industrial funds and complete the buy-out of these uneconomical leases by the end of FY 1988.

As you proceed with executing the buy-out program, first priority is to be given to purchasing existing uneconomical leases. Only after purchasing such uneconomical leases should consideration be given to acquiring new equipment that was not previously leased.

In order to track this DoD-wide program, I will require timely information on your formal plans and actual progress. The Deputy Assistant Secretary of Defense (Management Systems) will contact you during January 1986 to obtain more detailed information on your updated buy-out plans.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

PENTAGON AUTOMATION

House Appropriations Committee Report 99-332, Pages 30-31
Senate Appropriations Committee Report 99-176, Page 342
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The HAC directed that the Air Force not proceed with Air Staff automation attempts until a cogent automation plan and funding profile is submitted to Congress. Further, the HAC requested that the ASD(C) take the steps necessary to prevent unnecessary duplication and incompatibility of headquarters automation support systems across the services. The HAC also directed the ASD(C) to consolidate all headquarters automation efforts into a single program, perhaps using a lead service approach and to conduct a MAISRC review on it in fiscal year 1986. The SAC agreed with the HAC, but did not believe that consolidation was feasible at this time.

RESPONSE

The Air Force, consistent with Congressional guidance, has directed that no funds be obligated for the Improved Services Program until an Air Staff automation master plan has been approved.

The ASD(C) has directed each Military Department, the Office of the Joint Chiefs of Staff and Washington Headquarters Services to integrate into their overall ADP plans, a coherent program for its headquarters level automation efforts in the Pentagon (see enclosure). The guidance directs:

--That planning and program activities ensure that requirements are valid; appropriate standardization is achieved;

unnecessary duplication is avoided; cost effective acquisition is achieved and necessary interoperability and data exchange is accommodated.

--The Components to work with existing groups and support organizations as a means of sharing ideas and experiences and for seeking resolutions to common problems.

--The Components to establish an office of primary responsibility to coordinate the planning and implementation of its headquarters level automation efforts.

COMPTROLLER

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D C 20301

31 MAR 1986

MEMORANDUM FOR ASSISTANT SECRETARIES OF THE MILITARY DEPARTMENTS (FM)
DIRECTOR, JOINT STAFF, OJCS
DIRECTOR, WASHINGTON HEADQUARTERS SERVICES

SUBJECT: Improved Coordination of Headquarters Automation

During the FY 86 Appropriations process, the Congress directed the Department of Defense (DoD) to take the necessary steps to prevent unnecessary duplication and incompatibility of headquarters support systems. Consistent with this direction, each Military Department, the Office of the Joint Chiefs of Staff and Washington Headquarters Services (WHS) should integrate into its overall ADP plans, a coherent program for its Pentagon Headquarters automation efforts.

Planning and program activities should ensure that requirements are valid, appropriate standardization is achieved, unnecessary duplication is avoided, cost effective acquisition is achieved, necessary interoperability and data exchange is accommodated, and effective-coordination is performed. As an integral part of the planning process, you should work with existing groups and support organizations as a means of sharing ideas and experiences and for seeking resolutions to common problems. These support activities include, but are not limited to, Information Technology Users Groups, Defense Telecommunications Service - Washington, Protocol Standards Steering Committee, and Information Consulting and Support Activities.

Each Military Department, OJCS and WHS should establish an office of primary responsibility to coordinate the planning and implementation of its Pentagon Headquarters level automation efforts. After these offices have been designated and your planning is complete, please arrange for a briefing by contacting Mrs. Ruby Harney on 697-8636.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

ADP ACQUISITION TRAINING

House Appropriations Committee Report 99-332, Page 32
Conference Appropriations Committee Report 99-450, Page 267

CONGRESSIONAL DIRECTION

The HAC continues to place emphasis upon ensuring that contracting officers who acquire ADP equipment are adequately trained in ADP technology and acquisition rules and procedures. The Committee requested that the Assistant Secretary of Defense for Acquisition and Logistics examine the ADP training program of each Service and develop uniform and standard criteria for ADP acquisition training.

RESPONSE

The Department of Defense has developed a uniform ADP acquisition training program through the Army Logistics Management Center (ALMC) as lead activity. This program was developed after assessing the Services ADP acquisition training requirements and developing uniform and standard criteria. A description of the course is enclosed.

SUBJECT: Defense Contracting for Information Resources (DCIR) Course, United States Army Logistics Management Center (ALMC) Course Number ALMC-ZX.

The DCIR course was offered for the first time in December 1985 to 26 student representatives of all of the military departments, Defense Logistics Agency (DLA) and Department of Defense Computer Institute (DODCI). The DCIR course is a two week course designed to familiarize the attendees with the regulations and procedures needed to effectively and efficiently acquire Automatic Data Processing (ADP) equipment, software and services. Although the DCIR course is taught at an Army facility, every effort has been and will continue to be made to insure the course reflects the needs of the entire DoD community.

A draft DCIR Program of Instruction (POI) was developed by the ALMC staff and presented to representatives from the various agencies within DoD in a series of workshops for their comment and recommendations. The POI used in the December class was the product of these workshops. The students of the December class were asked to provide thorough critiques of the material covered. These critiques are currently under review by ALMC and will result in the refinement of the POI to reflect the needs of DoD. These changes include placing more emphasis on practical exercises and providing additional information on software and microcomputer acquisitions. A copy of the current POI is attached.

This course is designed to provide uniform instruction and information to the buyers of ADP equipment, software and services. By using the standard criteria, the course will promote this uniformity of ADP buying among the various Departments. The DCIR curriculum will be updated to insure compliance with changes in regulations and advancements in the ADP field.

The target student population of this course are those employees directly involved in the acquisition and procurement of ADP equipment, software and services. Although Contracting Officers and Contract Specialists are the primary attendees of this course, others who provide legal, policy or other advice to the Contracting Officer are welcome and encouraged to attend. There will be six classes taught in FY 86 and at least 15 classes in FY 87. Each class can accommodate 40 students. Most of the classes will be taught at ALMC. However, it is envisioned that at least three of the FY 87 classes will be taught at other locations.

SECTION I—PREFACE

A. COURSE: Defense Contracting for Information Resources

B. PURPOSE: To provide the Department of Defense (DOD) contracting workforce a thorough understanding of, and ability to apply properly, all directives related to contracting for information resources.

C. OBJECTIVES: At the conclusion of the course, the student should be able to:

1. Indicate the impact of legislation and other congressional action on the acquisition of information resources.

2. Apply appropriate regulations, policies, and procedures in accomplishing all tasks involved in the pre-award and post-award phases of information resources contracting.

3. Understand the potential effect of current issues and problems on the information resources acquisition process.

D. PREREQUISITES: Military and civilians who are assigned full or part-time to contracting for information resources, to include preparing, reviewing, awarding or administering such contracts, and who have completed the Management of Defense Acquisition Contracts (Basic) Course or equivalent.

E. LENGTH:

Peacetime	Mobilization
2 Weeks	0

F. LOCATION: U.S. Army Logistics Management Center, Fort Lee, Virginia.

G. METHODS OF INSTRUCTION: Instructional methods include lecture-conferences, practical exercises, and guest speakers from military and other governmental agencies or industry.

H. SCOPE: This course provides detailed instruction in all significant aspects of contracting for information resources. It is designed to provide a hands-on working familiarity with all pertinent Government regulations, policies, and procedures in this specialized area and, consequently, to prepare the student to effectively contract for information resources after a short internship.

I. SYMBOLS:

GS - Guest Speaker
LC - Lecture-Conference
PE - Practical Exercise

SECTION IV--ANNEXES

ANNEX A

POLICY AND REGULATION (Phase I)

Peacetime: 13 hours
Mobilization: 0 hours

PURPOSE:

ALM NUMBER	SUBJECT	HOURS & TYPE	
		PEACE	MOB
33-5879	Overview SCOPE: Opening remarks from a guest speaker, followed by administrative announcements, outline and objectives of the course, definition of "information resources", role and responsibility of each of the following General Services Administration, the National Bureau of Standards of the Department of Commerce, Office of Management and Budget, and the Department of Defense (DOD).	1 LC 1GS	0
33-5870	Legislative Background SCOPE: Examine the impact of the following legislative and congressional action on contracting for information resources: PL89-306 (Brooks Act), Paperwork Reduction Act, Warner Amendment to the Federal Property and Administrative Services Act, Joint House/Senate Conference report on the FY 84 Defense Appropriations Act, Competition in Contracting Act, FY 82 DOD Authorization Act et al.	2 LC	0
33-5872	Regulations SCOPE: Explain and discuss the following regulations as they apply to the acquisition of information resources: service information management regulations, Federal Acquisition Regulation (FAR), DOD FAR Supplement, service supplements to the FAR, Federal Information Resources Management Regulation (FIRMR), and OMB Circulars.	3 LC 3 PE	0
33-5875	Government-Wide Contractual Resources SCOPE: GSA-ADP Schedules: Purpose, use and nature, Computer Store, Teleprocessing Services Program, ADP Support Services, Federal Conversion Support Center and Federal Computer Performance Evaluation and Simulation Center (FEDSIM).	3 LC	0

SECTION IV--ANNEXES

ANNEX B

TERMINOLOGY AND TECHNOLOGY (Phase II)

Peacetime: 18 hours
Mobilization: 0 hours

PURPOSE:

		HOURS & TYPE	
ALM NUMBER	SUBJECT	PEACE	MOB
33-5871	Information Resources Terminology and Technology	6 LC 5 PE 1 GS	0

SCOPE: Define and explain basic ADPE system design and function, operating systems software, application software, ADP services, ADP support services, and maintenance. Explore current trends and latest technology. Cover evolution of Automatic Data Processing (ADP), Acquisition Strategy for Information Resources, Personal Computers, Dealing with Technical Personnel, Data Rights and Leasing Agreements, the effect of obsolescence on the marketplace, terminology, the "mystique" of ADP, and telecommunications.

33-5880	Software Procurement	2 LC 1 PE	0

SCOPE: To present the acquisition complexities inherent in diverse software procurements and describe some of the potential pitfalls likely to be encountered. To define the close interrelationship with other components of the system and the constraints that may result. To understand the additional considerations imposed by external legal factors such as: copyright laws, data rights and licensing provisions. To describe unique characteristics encountered in contracting for software development and software services.

33-5878	Contract Administration	2 LC 1 PE	0

SCOPE: Explain and discuss the following as they relate to information resources acquisition: contracting officer's technical representatives, treatment of upgrades, augmentations, exchange/sale reutilization, administration of down-time credits, GSA policy on trade-in values, testing and standards of performance for acceptance, training needs, spares, post-award conference, exercise of options, and disputes.

SECTION IV--ANNEXES

ANNEX C (Phase III)

METHOD AND PROCEDURES

Peacetime: 26 hours
Mobilization: 0 hours

PURPOSE:

ALM NUMBER	SUBJECT	HOURS & TYPE PEACE	HOURS & TYPE MOB
33-5876	Acquisition Strategy/Planning	6 LC 5 PE 1 GS	0

SCOPE: Explain and discuss the relationship of the information resources manager's five-year plan and related information resources management approval documents to the procurement request (PR). Life cycle management in the acquisition of information systems. The need for coordination with technical and ancillary departments in the creation of an acquisition plan. Obtaining procurement authority. The role of funding. Developing a source selection plan. The importance of upfront decisions to the success of the acquisition. Critical analysis of the requirement, ways to reduce acquisition lead-time.

ALM NUMBER	SUBJECT	HOURS & TYPE PEACE	HOURS & TYPE MOB
33-5877	Solicitation Development	3 LC 3 PE	0

SCOPE: Explain and discuss solicitation development for information resources acquisitions as follows: contract line item number structure, pricing questionnaire, individual sections, clauses, mandatory provisions, federal information processing standards publications and American National Standards Institute Standards, maintenance plans, purchase versus lease versus lease/purchase plans, evaluation factors for award, contract data requirements list (DD 1423) and data item descriptions.

ALM NUMBER	SUBJECT	HOURS & TYPE PEACE	 MOB
33-5869	Proposal Evaluation, Negotiations and Award	3 LC 3 PE	0

SCOPE: Explain and discuss proposal evaluation, negotiations and award as they relate to information resource acquisitions to include: technical and terms/conditions evaluation, cost/price evaluation, the interrelationship between the two, application of present value discounting factors, determing least cost method of acquisition, contract negotiations, source selection approvals, GSABCA and protest procedures, BARS, special aspects of pricing, remote terminal emulations, discounts, role of risk analysis in evaluation methodology, and debriefs.

ALM NUMBER	SUBJECT	PEACE	MOB
33-5881	Conclusion	1 LC	0

SCOPE: Brief presentation covering assistance available to the KO such as liaison offices, Information Resources Service Center, ASK (a procurement users' group), contacts within each service element. Course critique.

ALM NUMBER	SUBJECT	PEACE	MOB
	Graduation	1 GS	0

SCOPE: Guest speaker.

LOCAL AREA NETWORKS

House Appropriations Committee Report 99-332, Pages 32-33
Conference Appropriations Committee Report 99-450, Page 257

CONGRESSIONAL DIRECTION

The Committee on Appropriations expects the Office of the Secretary of Defense to become actively involved in the establishment of management policies and standards for Local Area Networks (LANs) throughout the Defense Department.

RESPONSE

At the Department level, the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) has taken the lead in establishing technical and management initiatives which can be used as a basis for formulating LAN policies and standards (see enclosure). The DoD strategy to accomplish these initiatives is twofold.

First, addressing the policy issues, ASD(C^3I) is hosting a meeting on April 18, 1986 comprised of the Military Departments, Defense Communications Agency, Joint Chiefs of Staff and a representative from the DoD Protocol Standards Steering Group. The objectives of this meeting will be to develop a strategy for LAN policy development and provide a forum for the exchange of LAN information (progress status, implementation, acquisition strategies, etc.) among the attendees.

Secondly, the ASD(C^3I) has tasked the existing DoD Protocol Standards Steering Group to expand its charter to include LANs and consider published Federal, voluntary, national and international standards for adoption as a DoD standard.

The Information Systems Directorate of ASD(C^3I) will continue to oversee this program to ensure that the Military Departments are provided with the necessary guidance/standards and a forum for LAN discussion to effectively and efficiently implement their LAN programs.

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-3040

COMMAND CONTROL
COMMUNICATIONS
AND
INTELLIGENCE

31 MAR 1986

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER)
DIRECTOR, DEFENSE COMMUNICATIONS AGENCY
DIRECTOR, DEFENSE INTELLIGENCE AGENCY
DIRECTOR, DEFENSE LOGISTICS AGENCY
DIRECTOR, NATIONAL SECURITY AGENCY

SUBJECT: Local Area Network (LAN) Policy, Standards and Protocols

LANs are a rapid telecommunications growth area in the DoD with programmed funding of several hundred million dollars over the next five years. To date, each DoD component is individually addressing LAN policy, standards, development and acquisition. There exists no DoD-wide forum to set LAN standards or to exchange ideas and approaches for implementing LANs efficiently and effectively. The House Appropriations Committee addressed these same concerns and in their House Joint Resolution 465, Further Continuing Appropriations for Fiscal Year 1986, Conference Report, directed OSD to develop the necessary internal management tools for LANs.

In an effort to assist in the development of these management tools, the Information Systems Directorate, OASD (C3I), will chair an ad hoc working group meeting on 18 April 1986 at 0930 in Room 1E801 - #4 of the Pentagon. The purpose of this meeting will be to discuss the need for LAN policies, standards, and protocols and to exchange information as to what the Military Departments are doing in the LAN area. Request addressees provide representation to this meeting. Representatives should have an in-depth knowledge of their organization's LAN programs. The Military Departments are requested to provide a 20-30 minute informal briefing (poor man slides encouraged) at this meeting on their LAN program to include: implementation and acquisition strategies, standards and protocols, existing and planned systems, dollars spent or programmed, problem areas and policy issues. A copy of the proposed agenda is attached.

Further, request that the Director, Defense Communications Agency, in his role as the Executive Agent for computer communications protocols, task the Chairman of the Protocol

Standards Steering Group (PSSG) to take the lead for the Department in the evaluation and development of LAN protocols and standards. The PSSG Chairman should provide a briefing during the 18 April 1986 meeting on actions taken or planned in response to this tasking.

Please provide attendee information no later than 11 April 1986 to Mr. Raymond Lecuyer, Information Systems Directorate (C^3I), extension 77626.

Donald C. Latham

Donald C. Latham

Attachment
As stated

AGENDA

LAN WORKING GROUP MEETING

APRIL 1986

0930-0945	INTRODUCTION/OPENING REMARKS	ASD(C^3I)/IS
0945-1015	AIR FORCE BRIEFING	AIR FORCE REP
1015-1045	ARMY BRIEFING	ARMY REP
1045-1115	NAVY BRIEFING	NAVY REP
1115-1130	DOD PSSG BRIEFING	PSSG REP
1130-1300	LUNCH	
1300-1600	OPEN DISCUSSION	ALL
	- DEFINITION OF LAN	
	- NEED FOR DOD POLICY (GATEWAY PROTOCOLS)	
	- COMMON ACQUISITION APPROACH	
1600-1615	CLOSING REMARKS	ASD(C^3I)/IS

SOFTWARE OBSOLESCENCE

House Appropriations Committee Report 99-332, Pages 33-34
Conference Appropriations Committee Report 99-450, Pages 267

CONGRESSIONAL DIRECTION

During the Committee hearings it was pointed out that many DoD ADP systems are being modernized by acquiring new computer equipment, but continue to use the old software. The government pays to "convert" existing software to be compatible with the new equipment but in the majority of cases "converted" software is not written in a manner that takes advantage of the technological capabilities of the new equipment. As a result, some ADP systems are generally less efficient than they could be. Another form of software obsolescence involves the situation where a software system has not kept up with functional changes in the organization it is intended to support. The Committee directed the Office of the Secretary of Defense (Comptroller) to undertake a study effort to identify the extent of technical and functional software obsolescence in the Defense Department. This report should outline the scope of the problem and the Defense Department planned actions to improve the situation.

RESPONSE

The study of software obsolescence requested in the House Appropriation Bill Report is entirely consistent with the direction in which we have been moving. We believe that the idea of a study must be integrated into the development of an expanded management system for dealing with modernization planning on a broad basis.

We plan to use the services of a Federal Contract Research Center to develop the information which the Committee has requested and to create a framework for a continuing software modernization program. A preliminary study plan should be available in late spring of this year. However, we can give you a general idea of what we intend to do:

--First, we will be developing specific criteria for evaluating individual applications. The General Services Administration has developed some guidelines in this area which we will be using.

--Second, we will be developing a methodology for summarizing the overall results of the detailed evaluations of large numbers of specific applications and relating this summary information to existing modernization efforts, and the budget process.

--Third, we will pilot test these concepts through a statistical sampling of DoD systems and installations. We believe that this sampling effort will also provide us a valid reference point for assessing just where we stand.

The House Report requested results by January 1987, although the Conference report removed this date. However, we believe it will realistically take us an additional year to complete the improvement analyses. In the interim we will continue to move forward with ongoing initiatives to modernize our equipment, software and strengthen personnel training. Throughout this effort we will be working closely with the Defense Components. The Senior managers in the DoD Components are very interested in modernization and are ready to move ahead.

Mr. CHAPPELL. Mr. Springett, I know you are delighted with the questioning here. Just a few—I know you are pleased to get this, but the rest we will put in the record and you just have a good time with them. You should get detailed information from the services and people who work for you.

I want to thank you for the good job you are doing and we won't belabor any more questions today. A lot of this information we need to get for the record.

[CLERK'S NOTE.—Questions submitted by Mr. Chappell and the answers thereto follow:]

OSD POLICY OVERSIGHT

Question. Has the Computer Resource Council been disbanded?

Answer. The Deputy Secretary of Defense directed on February 20, 1986 that the review process for all general purpose automatic data processing systems be consolidated under the Major Automation Information System Review Council (MAISRC). Reviews conducted by the Computer Resource Council will now be conducted by the MAISRC. An official dissolvent of the Computer Resource Council has not been issued at this time.

Question. Describe for the record the current organizations of each of the Services and show how they conform or differ from the OSD structure.

Answer. The Services have implemented applicable sections of Department of Defense (DOD) Directive 7920.1, "Life Cycle Management of Automated Information Systems", dated 17 October, 1978 and DOD Instruction 7920.2, "Major Automated Information Systems Approval Process", dated 20 October 1978. All persons involved in acquisition progams, including major modifications, must comply with these requirements. Specifically:

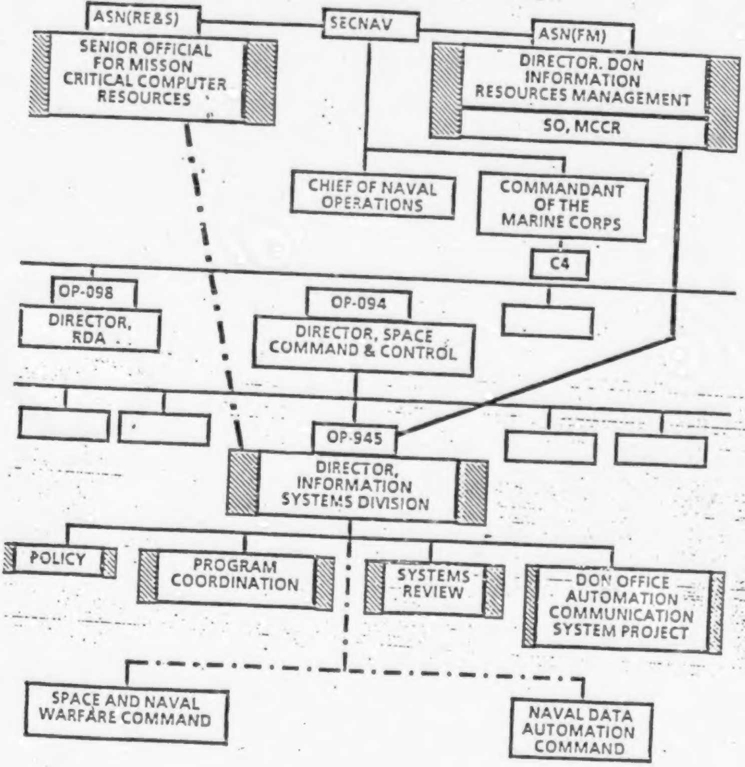
Air Force. Air Force has a parallel process for Automated Information Systems (AIS) review. An Automated Information Systems Review Council (AISARC) was established by the Assistant Secretary of the Air Force Financial Management. Similar to the composition of the CSD MAISRC, the AF AISARC is chaired by the Assistant Secretary of the Air Force Financial Management and provides a forum for reviewing major AF AIS's in the same milestone/life cycle process estabished by OSD. Policy is contained in AF Regulation 800-2, Acquisition Program Management. The Assistant Chief of Staff, Systems for Command, Control, Communications and Computers (AF/SC), provides the overall Air Force policy guidance for planning, programming, budgeting, and oversight of systems for command, control, communications and computers. A requirements board is established at each command and base to serve as a corporate forum for validating, approving, and prioritizing all requirements and for monitoring the continuing need and adequacy of operational systems. All validation, approval, and determination of architectural conformance with overall Air Force systems requirements and resources is done under the auspices of a requirements board. Each system has a designated manager with appropriate delegated authority and responsibility.

At the Air Force Secretariat level, Mission Critical Computer Resources come under the jurisdiction of SAF/AL; all other information systems are managed by SAF/FM. At the OSD level, management responsibility for information systems is governed by the Deputy Secretary of Defense Memorandum of February 1986, subject: "Management Responsibility for General Purpose Automatic Data Processing (ADP) Systems". Implementaion of this memorandum in the Air Force is currently being staffed at the Secretariat level.

Navy/Marine Corps. An organization chart of the Department of the Navy computer resources management is attached. As can be seen from the chart, Navy has not fragmented management of computer resources. Commercial Mission Critical Computer Resources (MCCR) as well as mission support information resources are subject to provisions of SECNAVINST 5231.1B, "Life-Cycle Management Policy and Approval Requirements for Information Systems Projects." In addition to being Director, Department of Navy Information Resources Management, RADM Quast is the Senior Official for MCCR reporting to both ASN (FM) and ASN (RES). This assures a single integrated approach to the management of all computer resources within the Department of Navy.

[Information follows:]

DEPARTMENT OF THE NAVY
COMPUTER RESOURCES ORGANIZATION


ASN(RE&S)
SENIOR OFFICIAL FOR MISSON CRITICAL COMPUTER RESOURCES
SECNAV
ASN(FM)
DIRECTOR. DON INFORMATION RESOURCES MANAGEMENT
SO, MCCR
CHIEF OF NAVAL OPERATIONS
COMMANDANT OF THE MARINE CORPS
C4
OP-098
DIRECTOR, RDA
OP-094
DIRECTOR, SPACE COMMAND & CONTROL
OP-945
DIRECTOR, INFORMATION SYSTEMS DIVISION
POLICY
PROGRAM COORDINATION
SYSTEMS REVIEW
DON OFFICE AUTOMATION COMMUNICATION SYSTEM PROJECT
SPACE AND NAVAL WARFARE COMMAND
NAVAL DATA AUTOMATION COMMAND

Army answer. The Army has a procedure that is designed to accomplish the same function as the MAISRC. Key decision makers hold In Process Reviews (IPR) in accordance with Army Technical Bulletin 18-100 at critical milestones to review system accomplishments and status (i.e., schedule, cost, objectives, problems, etc.). The results of the IPR are presented for decision. Upon approval the next phase is begun.

The Army is in the process of establishing a more formal MAISRC like structure for its review process. Details of the structure are currently being completed.

STRATEGIC PLANNING

Question. General Accounting Office reports and studies confirm the need for strategic ADP planning and identify inadequate planning as a principal problem and management weakness government-wide.

Mr. Springett, has the Department implemented a strategic information systems and technology planning process to support DoDs' mission objectives?

Answer. Our primary strategic planning process within the Department of Defense is our Planning, Programming and Budgeting System (PPBS). The PPBS has a five year strategic planning cycle and a one year budgeting cycle. This is the central management process the Department uses to plan, program, and budget for all our Defense resources, including information systems. In addition, each year each of the Military Departments update their functionally oriented ADP systems plan. These plans are reviewed at the OSD level and, for the past two years, have been provided to OMB. These plans are also provided to GSA for consolidation into a Federal Government Five Year ADP Plan.

Question. What future initiatives are planned?

Answer. This year the Comptroller instituted the development of a formal ADP plan for systems supporting the Office of the Secretary of Defense. We expect our first OSD plan to be drafted by June 1986. The basic foundation is sound and exists in the PPBS and the Service ADP plans. I expect planning changes will evolve as we proceed and I plan to make those changes when we see clear opportunities for improvement through inserting new initiatives.

Question. Have you provided ADP systems planning guidance to the military components to ensure compatibility, avoid duplication, and achieve systems integration across organizational boundaries and functional areas?

Answer. The basic policy guidance to meet the goals and avoid the problems you mentioned is contained in the Department's Information Resources Management Directive (DoDD 7740.1). My office has drafted some planning guidance documents which are intended to amplify the basic IRM policies and assist the Components planning. However, until the draft guidance is further sharpened, it is too early to determine whether this will be an effective addition to strengthen information systems planning.

Question. If not, why not?

Answer. Basic policy guidance has been furnished the services.

Question. Has OSD delegated responsibility for information systems and technology planning to the military components?

Answer. Yes, fundamentally the Department believes that the vast majority of information systems and technology planning must be done within the components that have the missions and functions that must be supported by these systems.

Question. If so, how does OSD ensure that plans are consistent with current policies and are integrated to support DoD mission objectives?

Answer. My staff actively reviews the military components' five year plan and budget plans and make ongoing resource decisions based on these plans. In addition, my staff and the functional sponsor staff review the component ADP systems plans to ensure they do comply with OSD policies. Further, when a specific program is reviewed in the Major Automated Information System Review Council compliance with policy is assessed.

OSD REVIEW PROCESS

Question. The main tool used by the Defense Department to approve the development and review the status of major automated information systems in the Office of the Secretary of Defense is a body chaired by the Comptroller known as the Major Automated Information Systems Review Council: MAISRC.

Mr. Springett, how does the MAISRC process work and who in OSD participates in it?

Answer. The MAISRC is a program management oversight body for Major Automated Information Systems. It is very similar to the DSARC process which is applied to major DoD weapon systems such as the B-1 Bomber or the DIVAD Gun.

The MAISRC reviews plans for specific automated information systems at four key milestones; and makes a decision to approve, disapprove or redirect. The four milestones are:

Milestone 0—Mission Element Need;
Milestone I—Concept;
Milestone II—Definition and Design;
Milestone III—Deployment and Operations.

The Assistant Secretary of Defense (Comptroller), as the DoD senior information resource management official, is a permanent member. The Assistant Secretary of Defense (Command, Control, Communications and Intelligence), as senior DoD telecommunications official, is a permanent member. Other Assistant Secretaries are members for specific systems for which they have functional cognizance, e.g., the ASD(HA) is a member for the Tri-Service Medical Information System.

Question. Are MAISRC reviews primarily focused on reviewing and approving individual systems?

Answer. Yes, the primary function of the MAISRC is to make the oversight decisions to which I have just alluded.

Question. Who in OSD reviews the Services overall ADP planning process, and specifically so-called ADP architectures?

Answer. ADP architectures have generally been limited in scope to specific system development programs. Thus, we speak of a WIS architecture, or a TRIMIS architecture. MILDEPT architectures are a very recent development.

As a strategy to promote modernization, and utilize standards which will reduce cost through increased competition, we believe that the architecture can help focus the direction for Service programs. We believe that review of such broad strategies is an appropriate OSD staff function, in which my office should take the lead.

Question. How many MAISRC reviews have crossed service and/or function areas boundaries?

Answer. The MAISRC has reviewed 2 joint programs: TRIMIS, and FFMIP. It has also reviewed 4 multi-functional programs: Phase IV, PASS/SDS, DLA Modernization, and TACCS [reviewed by the CRC].

Question. The 1986 Appropriations Conference Report directs the Comptroller to enforce standards and policies through the MAISRC. What impact will the "enforcement" responsibility have on the MAISRC's current role?

Answer. None, this responsibility was inherent in the role of the MAISRC from the outset.

Question. Provide for the record all DOD major automated information systems for which no systems decision paper existed on April 1, 1986.

Navy answer. Early in the requirement formulation, projects are sometimes approved which if carried through could become a major automated information system (AIS), but Navy does not regard them as AISs until the requiring organization has fully agreed on the need. As of 1 April 1986, Navy has no projects which were sufficiently defined to be considered as major AISs and which have no system decision paper.

Air Force answer. Air Force Capability Assessment Program (AFCAP), Core Automated Maintenance System (CAMS), Air Force WWMCCS Information System (AFWIS), Local On-Line Network System (LONS), 1 ISG Modernization (Honeywell System Replacement Program), Automated Technical Order System (ATOS), MAC Information Processing System, Strategic War Planning System, SAC Command and Control Processing and Display System (CCPDS-R), Personnel Concepts III.

Question. What does this lack of documentation imply about the Department's ADP management discipline?

Air Force answer. The lack of system decision papers (SDPs) for the above systems does not imply that they do not or will not receive proper management attention.

COMPETITION

Question. Mr. Springett, your statement makes a good case that the Department has greatly increased competition in ADP procurements. In FY 1982, less than one third of ADP acquisitions were competitive, while in FY 1985 about one half were.

Mr. Springett, what has caused increased ADP competition in the Defense Department?

Answer. We believe that increased competition has occurred because of a combination of factors and cannot be attributed to one factor alone. These factors are:

An increased emphasis on competition in ADP procurements, since the Assistant Secretary of Defense (Comptroller) provides quarterly reports to all DoD Components which spotlight trends and situations that should be reviewed by the senior Information Resource Management officials and the Competition Advocates.

The resultant increased awareness of competition that now pervades all levels of both procurement and functional personnel.

Question. How will you institutionalize it, so that the Department does not fall back to the position of just a few years ago?

Answer. We will institutionalize and protect our gains by continuing to publish periodic reports of statistical trends and requests for correction of any decreasing competition rates. Additionally, a training course has been established to train all contracting officers who procure ADP in the complexities that are involved in ADP procurements.

Question. In your opinion, can the Army achieve competition levels equal to those of its sister services?

Answer. The Army started FY 1985 with very low first and second quarter percentages of 31% and 16% respectively. The Assistant Secretary of Defense (Comptroller) questioned their low performance rate and gave specific direction to develop a plan of action aimed at increasing the level of competitive actions.

As a result, in the third and fourth quarters of FY 1985 the Army made remarkable progress and their performance rose to a 56% and 55% rate of competition, respectively.

Army has now achieved a 58% competition rate in the first quarter of this year.

Question. As the Department's senior ADP official. What actions will you take to increase the level of Army ADP competition?

Answer. I believe that the Army is now adequately working to increase its level of competition for ADP procurements.

Question. For the record in a common format, provide: ADP competition percentage statistics for fiscal year 1980 to 1985, by Service and DoD Agency.

Answer. The data for FY 1980 thru FY 1982 are not readily available, since they have been archived and are now being stored off-line. A special software program would have to be developed in order to access and process this data. The statistics for FY 1983, FY 1984, and FY 1985 are as follows:

[In percent]

	Army	Navy	Air Force	DoD
Fiscal year:				
1983	31	50	33	39
1984	36	44	43	40
1985	45	57	59	51

Question. ADP competition dollars awarded that relate to the above percentages.

Answer. The amounts shown in the table below are in thousands of dollars and relate to the above percentages:

	Army	Navy	Air Force	DoD
Fiscal year:				
1983	$155,586	$534,593	$170,852	$990,809
1984	242,140	429,319	347,193	1,193,523
1985	438,247	781,974	571,956	2,128,010

Question. Number of exceptions to ADP competition and attendant dollar value by Service in each fiscal year 1980 to 1986.

Answer. The policy to the Services concerning approvals for exceptions to ADP competition did not go into effect until February 1, 1984. Therefore, both tables below reflect that timeframe. This first table shows the dollar value of approved exceptions by Service:

	Feb. 1, 1984 to Sept. 30, 1984	Fiscal year 1985	1st qtr. fiscal year 1986
Army	$47,880,439	$41,000,000	$17,300,000
Navy	21,239,727	22,348,208	1,633,003
Air Force	19,262,725	55,085,000	19,484,000

This table shows the number of approved exceptions by Service:

	Feb. 1, 1984 to Sept. 30, 1984	Fiscal year 1985	1st qtr. fiscal year 1986
Army	45	54	9
Navy	937	586	86
Air Force	37	59	17

PENTAGON AUTOMATION

Question. In FY 1986, the Committee expressed its concerns over Pentagon office automation programs. Through 1991, the current budget forecasts $268 million for Pentagon ADP projects:

	Millions
Army Corporate Data Base	$24
Army Headquarters Integrated Office System	61
Navy Office Automation and Communications System	11
Air Force Office Automation Preplanned Enhancement, and Improved Services Program	172

For the record, provide by Service and appropriation all funds that will be spent in each fiscal year 1985 to 1991 for office automation and other ADP initiatives.

Navy answer. The central OA system in the Pentagon is the Department of the Navy Office Automation and Communications System (DONOACS).

[In thousands of dollars]

Appropriation	Fiscal year—						
	1985	1986	1987	1988	1989	1990	1991
Military pay, Navy	237	280	280	280	280	280	280
Other procurement, Navy	3,396	2,445	1,811	1,250	1,190	2,400	2,375
Operations and maintenance, Navy	2,526	2,815	2,673	2,543	2,529	2,545	2,544
Total	6,159	5,540	4,764	4,073	3,999	5,225	5,199

Air Force Answer. There is no longer an Improved Services Program. Each project which comprised the Improved Services Program is now treated separately. These projects are:

a. Honeywell Systems Replacement Project.

b. Office Automation for OSAF.

c. AF/XO Operations Systems Network (OPSNET).

d. Air Staff Office Automation (Includes Micro/Peripheral Support).

e. Secure Communications Controller.

PROJECTED FUNDS FOR THE ABOVE PROJECTS

[In millions of dollars]

	Fiscal year—						
	1985	1986	1987	1988	1989	1990	1991
3080	4.8	6.5	7.2	24.2	35.2	19.5	20.0
3400	5.3	8.6	2.0	2.5	25.2	19.2	22.9
Total	10.1	15.1	9.2	26.7	60.4	38.7	42.9

Army answer. For the Army, these initiatives are the Army Headquarters Integrated Office Systems (HIOS), Strength and Personnel Management Action Forecasting System (FORECAST) and Headquarters Information Mission Area (IMA) Support. Their cost by fiscal year is shown below. All figures are from the FY 1987 President's budget which are OMA funds.

[In thousands of dollars]

	Fiscal year—						
	1985	1986	1987	1988	1989	1990	1991
HIOS	7,615	8,875	4,729	1,684	1,564	1,386	1,264
Forecast	10,700	11,140	10,210	11,540	11,540	11,540	11,540
HQDA IMA support	9,831	17,486	17,453	18,313	24,643	17,353	19,430
Total	28,146	37,501	32,392	31,537	37,747	30,279	32,234

Question. For the record, provide the life cycle cost of each of the above named systems. Indicate whether they are managed by mandatory DOD life cycle management policies, whether mission element need statements and system decision papers exist for each system, and whether a formal, indepth economic analysis has been conducted on each system.

Navy answer. DONOACS. The life cycle cost of DONOACS is $37,800,000. DONOACS is managed by mandatory Department of Defense life cycle management policies. Approved mission element need statements and system decision papers exist for DONOACS. A formal, in-depth economic analysis has been conducted for the DONOACS project.

Air Force answer:

Project:	Life cycle cost
Honeywell Systems Replacement Project	$167,900,000
Office Automation for OSAF	4,500,000
AF/XO Operation Systems Network (OPSNET)	18,000,000
Air Staff Office Automation	29,400,000
(Includes Micro/Peripheral Support) Secure Communications Controller	19,700,000

The above systems are managed under the Air Force 700 series regulations, which are based on DODD/I 7920. 1&2 procedures. Mission element need statements and system decision papers have not been prepared. However, corresponding AFR 700 series requirements/approval documentation has been, or will be, prepared for the above projects. Economic analyses were prepared for the Honeywell Systems Replacement and the AF/XO Operations System Network (OPSNET) projects. Economic analyses were not prepared for the Office Automation for OSAF and Air Staff Automation projects since these are requirements type acquisitions. As systems are acquired from these two contracts, appropriate paperwork will be accomplished. An economic analysis has not been prepared for the Secure Communication Controller project since this is being worked by the National Security Agency.

Army answer. The Army systems are shown below:

	Live cycle mgmt. policies	Mens and SDP	Economic analysis	Life cycle cost
HIOS	Yes	Yes	Yes	$100,000,000
Forecast	Yes	Yes	Yes	114,500,000
HQDA IMA	No	No	Yes	116,800,000

Question. For each of the above name systems, describe each one in detail, provide detailed milestones for each, and compare them to each other for the record. Specifically, where are these systems similar and where do they significantly differ?

Navy answer. DONOACS. DONOACS is the Navy implementation of office automation in the headquarters environment in Washington (not just the Pentagon), and is designed to meet Navy unique organization and management requirements. DONOACS was established to curtail the proliferation of independent (and incompatible) computer-assisted administrative systems, in favor of creating a centrally controlled, decentrally operated Department of the Navy headquarters office automation system.

DONOACS has two missions: (1) Address the office automation requirements of the Navy Secretariat; and (2) establish an office automation network capability that will enable the office automation systems of the Navy and Marine Corps headquarters commands in the National Capital Region (NCR) to intercommunicate and interoperate. Each non-Secretariat command will be responsible for the funding, justification, acquisition, and management of its own internal office automation systems, but will be required to interoperate with the DONOACS network.

Project objectives are to: (1) Develop Navy headquarters office automation applications and policies; (2) establish and manage an office automation network to serve the Navy headquarters commands, and integrate existing systems; (3) manage and expand the office of the Secretary of the Navy/office of the Chief of Naval Operations correspondence control system, a major component of the Secretariat and Headquarters Information Processing System (SHIPS); (4) develop, jointly with the National Bureau of Standards, the Navy standard Document Interchange Format (DIF) to permit exchange of documents between office systems supplied by different vendors; and (5) provide guidance and assistance on office automation to subordinate commands.

Requirements analyses were performed on selected, representative offices to determine need and benefits, to determine system specifications, and to provide baseline data to support post implementation auditing.

The system architecture will consist of three main elements, a central computer site facility accessible by each Secretariat office; local area networked systems within each office to satisfy the office's internal requirements; and microcomputers and/or terminals to satisfy those offices whose requirements are too small to justify a local area network system, and for users who only require direct access to the central site.

A pilot comprised of three organizations will validate the communications architecture, the requirements analyses, and provide "lessons learned" feedback that will be used in the full scale implementation of office automation in the Secretariat. The pilot will also satisfy those organizations' legitimate needs as determined by the requirements analyses.

A competitive solicitation will be conducted for the pilot, and to provide a multi year indefinite delivery acquisition vehicle for the Navy Secretariat, Headquarters Marine Corps, and the office of the Chief of Naval Operations. This will ensure compatibility within the three organizations since each office can obtain the same kind of equipment from a common contract. The network that ties the pilot elements together will be expanded to connect the office automation systems in the NCR.

After the pilot is completed, analyses of remaining Secretariat organizations will be performed to determine and identify detailed configuration and organization unique requirements. The necessary equipment will then be installed. Post-implementation reviews and audits will be conducted to determine if objectives have been met, and to plan for future requirements.

Milestone schedule

Convert SHIPS to in-house operation	Oct 83
Complete DIF development	Dec 84
System decision paper II approved	May 85
Begin implementation of multi site pilot system	Apr 86
NCR network initially operational (pilot)	Dec 86
System decision paper III approved	Mar 87
Proceed with implementation	Apr 87

Air Force answer:

a. Project Description: Honeywell Systems Replacement—Will competitively replace the classified and unclassified Honeywell computer system. The existing sole source contract for the classified system expires Aug 1990. The contractor will discontinue the classified line in 1988. Cost-to-use ratio of the unclassified system is too high. Current systems cannot support user requirements.

Milestones: RFP release-Dec 86, Contract Award—Oct 87.

b. Project Description: Office Automation for OSAF—This program provides standard office automation capabilities to the Office of the Secretary of the Air Force (OSAF). Continues implementation of microcomputers, minicomputers, and communications equipment for OSAF. Will provide automated support for data base management, financial management, inventory, inquiry response, electronic mail and other required functions.

Milestones: RFP release-Sep 84, Contract Award—Aug 85.

c. Project Description: AF/XO Operations Systems Network (OPSNET)—OPSNET LAN consists of the first three segments of the Air Staff LAN and will provide the high speed communications required to support force status, management and planning. Continues the planned procurement of Air Force standard TEMPEST microcomputers, laser printers and other peripheral devices for the Air Force's Plans and Operations Deputy Chief of Staff.

Milestones: Multiple RFPs and contracts

d. Project Description: Air Staff Office Automation (including Micro/Peripheral Support)—This program acquires standard office automation equipment for the Air Staff to meet validated user requirements in compliance with the Air Staff Architecture. Continues purchase of shared micro processors, advanced automated work stations and peripheral devices. Provides integrated, interoperable, standard office automation capabilities for the Air Staff.

Milestones: RFP release—20 Dec 85, Contract Award—Aug 86.

e. Project Description: Secure Communications Controller—This program will provide for secure, non-vaulted communications. This independent electronic communications device attaches to a remote computer terminal to allow secure communications (encrypted) in an unsecure office environment.

Milestones: Not yet determined. Plans call for acquisition through the National Security Agency.

Army answer. The Headquarters Integrated Office System (HIOS) currently supports the Army Secretariat, elements of the Army Staff, staff support and selected field operating agencies located within the Pentagon and at limited other sites in the National Capital Area. HIOS supports integrated data processing, communications and office automation technologies through a distributive network architecture for the information requirements of HQDA. To minimize acquisition costs, office system equipment already in place at startup was incorporated, whenever possible, into the HIOS network. The HIOS prototype network was formally begun in December 1983. Between then and May of 1984 six minicomputers were activated. Testing and evaluation began officially in January of 1984 and was formally completed by November of the same year. The post prototype network operation and hardware contract provides for full and open competition. Past and future project phasing are:

Phase I (FY 83/84): HIOS Prototype (Conceptual); Upgrade Agency Office Systems Equipment; Integrate/Interface Office Systems with Network.

Phase II (FY 85): Integrate Selected Other Office Systems and Data Processing Systems; Expand Applications.

Phase III (FY 86/87): Continue to Operate While Examining Further Interfaces (i.e., Synchronous) and Acquisition Strategy Decision.

Phase IV (FY 88/89): Achieve Synchronous Integration and Operation.

It is planned that HIOS will be merged into the HQDA Information Network of integrated data processing, office automation and decision support service.

The Army Strength and Personnel Management Actions Forecasting System (FORECAST) projects the strength of the Army for specified Force Structure, End Strengths, fiscal constraints, Army policies and environmental considerations. In projecting Army strength, FORECAST models all personnel management actions—accessions, reenlistments, individual training and education, classifications and promotions, assignments and reassignments, voluntary and involuntary separations—as well as pay, allowances and other personnel related costs. It must be emphasized that the FORECAST System provides numerical information ("how many") but does not deal in specific individuals ("who"). It will provide executive level decision makers in graphic or numeric form, detailed or highly aggregated data/information from which to make timely personnel management decisions.

a. Projection capabilities. FORECAST will project the combination of accessions classifications and reclassifications, assignments and reassignments, promotions, reenlistments, and separations—with the associated training requirements and costs—of optimally manning a specified force structure within such constraints as end strength, MPA dollars, training capacity, DOPMA and other grade limitations, accession, continuation and promotion bounds, and the like.

b. Comparison capabilities. FORECAST will allow comparisons of the actions indicated by alternative force structures and constraint levels.

c. Update capabilities. FORECAST updates of the progress—monthly in peacetime, more frequently during mobilization—will show how actual performance differed from projections and provide a feedback mechanism as a basis for action to revise objectives, relieve constraints, or change policies.

d. Significant events in system developments since the President's FY85 budget request.

(1) The MOS Level System of FORECAST was officially accepted by the Army as the official source of enlisted strength projection data at Grade and Skill Level—June 1985.

(2) Completed System Specifications for the Reserve Component Enlisted and Officer Systems of FORECAST—March 1986.

(3) Completed the Functional Description for a National Guard Personnel Army (NGPA) Budget model—March 1986

(4) Completed a prototype Active Officer Grade and Year-of-Service model—December 1984.

(5) Began work on a prototype Active Officer Skill and Grade model—October 1985.

(6) Completed Phase II of the automation of the Military Personnel Army (MPA) Budget Process—January 1986.

(7) Completed Phase I of the Civilian Forecasting System—December 1985.

(8) Began work on a production level Officer Aggregate strength projection model—October 1985.

It is planned that FORECAST will be merged into a node on the Department of the Army Information Network (DAIN).

DAIN seeks to bring together under a single information architecture the Information Management requirements of all DA staff agencies within the Pentagon. The DAIN is not yet mature, but current efforts seek to centralize the planning and resourcing of existing systems. This combined effort will provide for other ADP support including the operation and maintenance of agency application software, critical enhancements to these applications including the infusion of decision support system and related technology, and critical information management consulting services.

The HQDA Information Mission Area (IMA) Support is not a system but rather reflects the combined OSA/ARSTAF coordinated planning effort that directly involved information management officers, functional and resource managers, and agency senior leadership. It represents a dramatic change in the way that HQDA recognizes and responds to information management requirements within the Pentagon. The following factors are having far reaching impact on the way information management business is conducted within HQDA:

a. Publication of the HQDA Information Management Plan. The most significant thing here is the unprecedented interaction among information planning staffs and the consolidation of HQDA requirements into management categories.

b. Establishment of the HQDA Program Budget Advisory Committee (PBAC) whch brought visibility to the planning and resourcing process and provided a forum for prioritizing HQDA information management initiatives.

c. Initiation of Army Staff Decision Support Systems (DSS) integration and acceleration efforts. The DSS initiatives within the HQDA are new and part of a high level continuing effort to provide HQDA planners and decision makers the right information management tools for a very complex and dynamic operational situation.

Both HIOS and FORECAST provide basic office automation tools but to different elements of the Army Staff. HIOS is targeted to staff officers in general, while FORECAST is targeted to support personnel managers. HIOS primary function is to provide basic office automation along with some limited graphic capabilities. FORECAST primarily provides a modeling system and complex graphics to assist personnel managers in projecting Army strengths in all fields. The office automation functions of FORECAST are secondary and considered a fallout of the complex software supporting the FORECAST system. HQDA IMA Support is a coordinated planning effort to identify the overall information systems requirements for the Army Staff. Finally, the DAIN is an effort to integrate the systems listed above into a single information system to provide a variety of services to the Army Staff.

Question. Explain why the Army exhibit C-43 indicates uncertainty in the number of offices to receive equipment under HIOS, where the phrase "remaining sites could include some or all . . .". Does the Army not know how much equipment it plans to buy in this $100 million system?

Answer. The exact amount of equipment needed is not known at this time. HIOS began as a prototype to test the concept of integrating the various ADP equipment supporting the Army Staff. The phrase "remaining sites could include some or all . . ." is based on the necessity to determine what additional equipment was needed in addition to that which was already present in the offices to be supported. Many of the agencies may be able to interface with HIOS using their installed base or a portion of it while others may require an installation of new HIOS equipment. These decisions will be made after a careful analysis of each staff agency's needs. When the analyses have been completed we will know the exact amount of equipment needed. The figures in exhibit C-43 could then be refined. Any major procurement for replacement hardware and integrated network capability will be based on the proven agency requirements.

Question. "Describe the need for the Army's proposed new start "Corporate Data Base" project which envisions "developing a single Army data base system which will make data in any of the Army's files and databases to any decision-makers having the appropriate clearance."

Answer. The CDB is not considered Pentagon automation. The CDB is an effort to organize and structure Army data in a way which permits integration of and access to data in different functional areas and levels of command. Today, Army data management is primarily based on file systems that have evolved in a "stovepipe" manner within functional areas. These systems make the integration and exchange of data very difficult. The CDB effort will make the access to data much easier and facilitate organizationally integrated decision making. This will result in more consistent and effective decisions.

Question. Mr. Springett, is the Department serious?

Answer. The Department has not completed an analysis of the viability of Army's "Corporate Data Base."

Question. Why is $2.1 million budgeted in FY 1987 and $24.3 million planned through FY 1991 for a system whose organizational needs analysis will not be accomplished until January 1, 1988?

Answer. The requirement for an Army Corporate Database developed from a 1982 General Officer Panel study of HQDA Information Systems needs, and the 1982 DA Inspector General Report on Force Modernization. It was directed by the Vice Chief of Staff, Army in 1983. An Army CDB Plan that detailed the concept and definition of the Army Corporate Database project was published on 11 December 1985. The organizational needs analysis is contained in Enclosure 2 of that Plan. The money budgeted for FY87 is to develop the conceptual and logical models of data in the Army which are needed by more than one data processing installation. The specific data requirements and data flows will be determined as a result of the models. The information engineering process that will be used in the CDB effort is an engineering approach to data management. It supports the use of database management systems (DBMS) which permit the separation of data from the use of data (i.e., data structure and storage as distinguished from programs and applications).

Question. What cost-benefit analysis was performed on this initiative prior to requesting funds from Congress for it?

Answer. The Army did not perform a formal cost-benefit analysis for this project. Benefits that would result from implementation include: a) reduction or elimination of cost failures cited in the 1982 DA Inspector General Report on Force Modernization and b) the reduction in costs now being expended to maintain many separate, unsynchronized files and databases.

Question. Will the Army follow normal DOD policies, especially life cycle management?

Answer. The Army is following the DOD life cycle management procedures, in general, and is modifying the processes that are allowed to be modified in order to fit the life cycle requirements. Detailed development and design is now underway at the Information Systems Engineering Command, and a detailed Implementation Plan is being prepared. Development, design and deployment will be carried out in an interactive information engineering process. Detailed operations plans have not yet been prepared. However, it is anticipated that the Army will be able to phase out many of the existing, disparate database and systems it now has, while simultaneously building new applications that utilize the CDB.

LOGISTICS MODERNIZATION

Question. The Defense Department has initiated automated information system acquisitions many of its logistics activities. Current automated logistics programs are estimated to have life cycle costs exceeding $6.5 billion.

Mr. Springett, as the Department's senior ADP official, have you reviewed and approved the ADP logistics modernization plans of the Army, Navy, Air Force, and Defense Logistics Agency?

Answer. The MAISRC already reviews the Air Force Logistics Management Systems Modernization program and DLA's Logistics Systems Modernization Program. Plans are also underway to review the Navy Aviation Logistics Management Information System (NALCOMIS). The Army's Commodity Command Standard System is in the process of being designated for MAISRC level review.

Question. Has anyone in OSD done so?

Answer. Logistics modernization plans have been addressed by the Assistant Secretary of Defense (Acquisition and Logistics) (ASD(A&L)). Additionally, specific programs are also addressed by the MAISRC which includes ASD(A&L) membership when logistics ADP systems are undergoing OSD review.

Question. Is there a Departmental logistics modernization plan?

Answer. No, there is not an overall Defense Department logistics modernization plan. The physical size of defense logistics and the multiple facets of its composition place a practical limit on the depth to which it can be realistically controlled through a single plan. There are however, comprehensive modernization plans in the various sub-functions of logistics and, across functional lines, within the respective military services and defense agencies. These functional and Service/Agency modernization efforts are monitored or directly controlled by the staff of the Assistant Secretary of Defense (Acquisition and Logistics) using as basic guiding principles the goals of readiness, efficiency, economy, and interoperability. The Acquisition and Logistics staff works in concert with other OSD staff experts on contemporary automatic data processing to assure that automated systems implemented as a result of these efforts are necessary and compatible elements of the overall logistics structure.

Question. For the record, identify the major system components for each of the modernization programs, their life cycle costs, planned management improvements, and estimated savings that will result.

Navy answer. The Navy Logistics Modernization Program is contained in section B, chapters 3 through 7 of the Department of the Navy Information Systems Plan published in Jan 85. All of the modernization programs in the plan, however, are not approved programs. Individual program approval is obtained through the information systems life cycle managment (LCM) process. Life cycle costs and estimated savings are estimated during the LCM of the individual programs. The approved major system components in the plan are as follows:

Stock Points Logistics Integrated Communications Environment (SPLICE). SPLICE will provide automatic data processing (ADP) equipment and system software to perform data entry functions, interactive transaction processing, telecommunication functions, and other processes. A local computer network links Navy Stock Points processors together at a site, and connections to the Defense Data Network provides communications among all Navy Stock Points computer systems. Acquisition and installation of SPLICE equipment and software began in 1984. The SPLICE processing systems will be used throughout the 1980s into the 1990s and will remain in place as part of the initial installation for Stock Points ADP replacement. Estimated Life Cycle Costs are $171.0M.

Stock Points ADP Replacement (SPAR) Project. The Stock Points ADP equipment upgrade will replace the obsolete Burroughs equipment at Stock Points in late 1980s. Estimated Life Cycle Costs are $1.5 billion.

Naval Aviation Logistics Management Information System (NALCOMIS). NALCOMIS will provide the base-level supervisor a single automated system to process flight activity, scheduled and unscheduled maintenance, support action, work load status, equipment status, configuration management, personnel management, fixed allowance management, and repairables management data. NALCOMIS will interface with Uniform Automated Data Processing System/Shipboard Uniform Automated Data Processing System (UADPS/SUADPS). It will assist maintenance and supply management by furnishing current and accurate information on which to base decisions. NALCOMIS will provide for direct entry of data and direct access to the site-oriented, centralized and integrated data base in a real-time, on-line mode. Status of aircraft, support equipment, and major components will be updated and available in real-time. The status of all maintenance actions will be maintained and available. The need for replacement parts and consumables will be electronically transmitted from the organizational maintenance activity or intermediate maintenance activity to the Supply Support Center. Life-cycle costs are estimated to be $568M. The majority of the savings in these systems are from improved mission performance, avoidance of future costs as we move to 600-ship Navy, and other intangible benefits.

Army answer. The major elements of Army Logistics Modernization programs follow:

a. TITLE: Commodity Command Standard System Computer Upgrade.

ACRONYM: CCSS-Computer Upgrade.

ESTIMATED COST: $56.5M.

PLANNED MANAGEMENT IMPROVEMENTS: This computer upgrade is necessary to continue to effectively support existing operational CCSS software;

(1) Alleviate equipment saturation and slow processing.

(2) Provide capability to field completed systems for which there is no room.

(3) Provide on-line access to data, resulting in higher productivity and improved readiness.

ESTIMATED SAVINGS: The estimated savings from the CCSS Computer Upgrade for fiscal years 1986–1991 are $78.87M. These savings are reflected in budget and program documents.

b. TITLE: Commodity Command Standard System (CCSS)-Software Modernization.

ACRONYM: CCSS-Software MOD.

ESTIMATED COSTS: The programmed costs for the CCSS Software Modernization are $51.5M.

PLANNED MANAGEMENT IMPROVEMENTS:

(1) Capability for computing materiel requirements by weapon system.

(2) Automated budget preparation.

(3) Requisition processing on-line.

(4) Materiel redistribution.

(5) Reduced inventories based on fewer rejects, faster ordership time, up-to-date requirements, and on-line supply control studies.

ESTIMATED SAVINGS: The estimated savings from the CCSS Software Modernization in fiscal years 1989–1994 are $89.53M. These cost savings are reflected in budget and program documents.

c. TITLE: Standard Depot System Modernization (SDS–MOD).

ACRONYM: SDS–MOD.

ESTIMATED COST: The projected cost for SDS–MOD would be $44M. However, the SDS–MOD project is currently unfunded.

PLANNED MANAGEMENT IMPROVEMENTS:

(1) Elimination of card input and hardcopy output.

(2) Accurate job assignment costing.

(3) Easy/quick data entry and instant validation.

(4) On-line file query capability.

(5) Audit trails.

ESTIMATED SAVINGS: The projected cost savings from SDS-MOD for fiscal year 1988–1995 would be $279M. These cost savings are reflected in budget and program documents. This assumes funds are available for contract award for application development in November 1987 and for hardware and executive software in February 1988. Productivity gains will commence in June 1988. All these improvements would result in higher depot productivity in storage, maintenance and transportation.

d. TITLE: Computer Aided Logistics Support/Technical Information Management System (CALS/TIMS).

ACRONYM: CALS/TIMS.

LIFE CYCLE COST: The programmed costs for CALS/TIMS are $231.8M.

PLANNED MANAGEMENT IMPROVEMENTS:

(1) Increased availability of logistics technical information in the form required by the user.

(2) Improved data quality and currency.

(3) Reduced costs for logistics support data generation and maintenance.

(4) Reduced space/weight requirements for information storge.

ESTIMATED SAVINGS: The projected cost savings from CALS/TIMS for fiscal years 1990–1994 are $240.2M. These cost savings are reflected in budget and program documents.

In addition to the Army Materiel Command (AMC) systems previously identified, the following Standard Army Multi-Command Management Information Systems (STAMMIS) are considered major components of the Army Logistics Modernization effort.

a. TITLE: Unit Level Logistics System.

ACRONYM: ULLS.

LIFE CYCLE COST: Estimated at $451M.

A Cost and Operational Effectiveness Analysis (COEA) update is in process.

PLANNED MANAGEMENT IMPROVEMENTS: ULLS is a user friendly system which will provide soldiers at the company level with an automated method of performing supply, maintenance and transportation related functions that could previously only be accomplished through manual procedures. ULLS will standardize unit procedures, reduce error rates, reduce excess stocks through efficient management of Prescribed Load List (PLL), and improve unit readiness. This system will automate the requisition, receipt, storage, and issue functions related to the PLL. ULLS also will provide equipment status information which can be retrieved for readiness reporting purposes.

ESTIMATED SAVINGS: 371 spaces in non-divisional DS/GS units, $16M in supplies, forms, materiel; improved materiel readiness of approximately 1.2 percent, with dollar equivalency of $570M. These cost savings are reflected in budget and program documents. This equivalency cannot be related or construed as budget (dollar) reductions/savings.

b. TITLE: Army Food Management Information System.

ACRONYM: AFMIS.

LIFE CYCLE COST: Initially estimated as $170M. Revised Automation Economic Analysis (AEA) in process expected to reduce life cycle costs based on program improvements.

PLANNED MANAGEMENT IMPROVEMENTS: AFMIS, a Congressionally mandated system, will provide automated support of current manual food service functional requirements. The system will apply uniform DOD principles and policies to support entitlement verification and financial accounting requirements, and will interface to sources of supply, installation financial systems, and Troop Support Agency headquarters.

ESTIMATED SAVINGS: $11.8M annually in civilian personnel and inventory carrying charges and headcount controls. These cost savings are reflected in budget and program documents.

c. TITLE: Standard Army Retail Supply System.

ACRONYM: SARSS.

LIFE CYCLE COST: Estimated at $186M.

PLANNED MANAGEMENT IMPROVEMENTS: SARSS is being designed to modernize the Army's retail supply system from the direct support unit up to the theater Army level. SARSS is being designed in four modules to replace the existing manual or automated systems at the direct support unit and at the materiel management centers in the division, corps, and theater. SARSS will provide a user friendly interactive system with a LOGMARS bar code reading capability.

ESTIMATED SAVINGS: 248 spaces, potential for pipeline and excess materiel reductions offsets $56M, improved materiel readiness of approximately 1.3 percent; dollar equivalency of $610M. This equivalency cannot be related to or construed as budget (dollars) reductions. These cost savings are reflected in budget and program documents.

d. TITLE: Standard Army Maintenance System Levels 1 and 2.

ACRONYM: SAMS-1/SAMS-2.

LIFE CYCLE COST: Estimated at $176M.

PLANNED MANAGEMENT IMPROVEMENTS: SAMS automates maintenance operations management at the retail level throughout the Army. SAMS-1 automates maintenance company functions which were previously performed manually by providing automated work order management, shop stock operations, and reports capability. SAMS-2 collects data from SAMS-1 and provides managers (via an automated mode) with information pertaining to: inoperative equipment, readiness, manpower and parts costs, maintenance backlog information, maintenance shop evaluation capability, and fleet management data. It provides interactive file inquiry capability to forward support battalions and Materiel Management Centers in Division Support Commands (DISCOMS), Corps Support Commands (COSCOMS), and Theater Army Area Commands (TAACOMS).

ESTIMATED SAVINGS: Personnel manyears (MY) of effort, approximately 950; potential offset in pipeline requirements and sample data collection equivalent to approximately $25M; improvements in materiel readiness of approximately 1.4 percent, with a dollar equivalency of $657M. This equivalency cannot be related to or construed as budget (dollar) reductions.

e. TITLE: Standard Army Automated Contracting System.

ACRONYNM: SAACONS.

LIFE CYCLE COST: Estimated at $67M.

PLANNED MANAGEMENT IMPROVEMENTS: Current system, other than some isolated instances, is primarily a manual operation using typewriters and "stubby pencil." SAACONS will automate the entire spectrum of contracting functions, contract document processing, preparation of purchase orders, tracking all contractual actions, and preparation of management reports.

ESTIMATED SAVINGS: SAACONS will provide the first comprehensive automated system for installation contracting. It will automate the lower level functions of small purchasing, large contracting, and reporting, and produce management data versus the "manual" mode of today. Further, SAACONS will standardize many aspects of Army installation contracting. It will provide the capability to reduce the administrative lead time (ALT) for actions. Overtime requirements are expected to be reduced by an estimated $8-10 million per year. These cost savings are reflected in budget and program documents.

f. TITLE: DA Movement Management System-Redesign and DA Movement Management System-Movement Planning Module.

ACRONYM: DAMMS-R and DAMMS-MPM.

LIFE CYCLE COST: Estimated at $82 million.

PLANNED MANAGEMENT IMPROVEMENTS: DAMMS currently does tracking of air cargo and of containers and breakbulk cargo arriving by ocean carriers. The enhanced DAMMS is being modularly developed in a two-part effort.

(1) DAMMS-Redesign will support, with automation, the daily operations aspect of movement management.

(a) Management of theater physical distribution, an improved version of the current functions.

(b) Management of theater Army transportation assets. It will, as an example, prepare many of the daily reports, orders, convoy route instructions, etc.

(2) DAMMS-MPM will support the planning aspect of movement management. It is the wartime movements program and theater transportation network analysis model.

ESTIMATED SAVINGS: Anticipated benefits (to be quantified in an Economic Analysis (EA), expected to be completed in fourth quarter FY86) are recognized in attaining improved readiness and greater transportation management and movements control. Cost avoidances will be realized by providing sufficient capabilities to sustain combat successfully at a significant lower manpower cost than otherwise would be required. The system will improve asset control, shorten delivery times, allow diversions of cargo, and provide more effective planning.

g. TITLE: DA Standard Port System-Enhanced.

ACRONYM: DASPS-E.

LIFE CYCLE COST: Estimated at $41.2M.

PLANNED MANAGEMENT IMPROVEMENTS. Current DA Standard Port System (DASPS) is antiquated.

(1) Obsolete 1964 vintage ADPE—last of its kind.

(2) Maintenance costs are exorbitant.

(3) Fixed site locations are vulnerable to attack.

(4) System has limited processing capabilities.

New DASPS-E package provides:

(1) Abililty to support wartime volumes of cargo documentation in six MTMC OCONUS ports and seven terminal battalions (three active and four reserve).

(2) Wartime mobility and green-suit maintenance.

(3) Commonality of ADPE with other Army units using Decentralized Automated Service Support Centers-Division/Corps ADPE (DAS3 D/Cs).

(4) Ability to do port workload and cargo offload planning.

(5) Means to support remote operations at up to three subports (or piers) away from the main port.

ESTIMATED SAVINGS: DASPS-E, as a mobile system, supports the Army's critical go-to-war requirements. The system maintains visibililty of warstoppers as they move through the transportation system and establishes essential movement control. DASPS-E will be operated by functional personnel thereby minimizing the need for highly trained technicicans. The system automates functions previously accomplished in time-consuming, labor-intensive manual operations, thereby providing near realtime information versus historical data. The automated data processing capabilities support efficient management of the theater physical distribution network.

h. TITLE: Transportation Coordinator Automated Command and Control Information System.

ACRONYM: TC ACCIS.

LIFE CYCLE COST: Estimated at $54M.

PLANNED MANAGEMENT IMPROVEMENTS: TC ACCIS is basically a unit/installation support system. An objective is to improve the timeliness and accuracy of unit movement data during deployments; this is directed primarily at supporting the Transportation Operating Agencies and the Joint Deployment System. A second objective is to assist the units and installation in the preparation of transportation movement documents.

ESTIMATED SAVINGS: The benefits (rather than savings) from TC ACCIS will appear as faster deployment of units and more effective use of transportation assets (rail cars, commercial trucks, aircraft, and ships of all kinds).

i. TITLE: Standard Army Ammunition System-Level 4.

ACRONYM: SAAS-4.

LIFE CYCLE COST: Initially estimated at $44M. The Economic Analysis (EA) will be updated in the 4th Quarter, FY86.

PLANNED MANAGEMENT IMPROVEMENTS: SAAS-4 automates the receipt, storage, inventory, issue, and accountability of ammunition at storage sites. It replaces manual procedures which are labor intensive and not responsive to the fast turn-over of ammunition items in wartime. SAAS-4 is the foundation to the SAAS-3 systems already fielded to the corps and theater levels. SAAS-4 is scheduled for user testing in Korea in late Summer 1986.

ESTIMATED SAVINGS: SAAS-4 was developed to provide automation for wartime workload. Benefits provided by the system include:

(1) Reduced customer processing time at ammo supply points.

(2) More rapid capability to transit easily to wartime operations.

(3) More efficient and effective control of ammunition at the retail level through an improved system of maintaining all stock records and supporting records.

(4) More efficient and effective control of stored ammunition at the retail level through compliance with explosive safety standards.

(5) More effective and efficient control of ammunition at the retail and wholesale levels by improving the accuracy of the accounting for guided missile and large rocket items by serial number.

j. TITLE: Standard Property Book System-Redesign.

ACRONYM: SPBS-R.

LIFE CYCLE COST: Estimate TBD. (Economic Analysis is pending)

PLANNED MANAGEMENT IMPROVEMENTS: SPBS-R will redesign the existing automated Standard Property Book System (SPBS) which operates in a batch mode on a time-shared mainframe computer. SPBS-R operates in a user friendly mode on a microcomputer and decentralizes property book functions for light divisions. This system will improve accountability and visibility for both manual and automated property books. SPBS-R was successfully tested at 7th Infantry Division (Light), Ft. Ord, CA.

ESTIMATED SAVINGS: TBD.

Air Force answer. The planned management improvement of the overall AFLC modernization program must be placed in the proper perspective. This perspective focuses on the combat readiness and sustainability of operational forces in lieu of a more traditional economic return. Selecting purely economic measures, such as dollar savings in processing or manpower reductions, as the only justification for ADP, ignores the true functional benefits and objectives of the LMS Modernization Program.

The Logistics Management Systems Modernization Program has placed maximum emphasis on increased operational readiness and combat sustainability. Each project contributes to this objective through tangible improvements in the underlying logistics functional areas. While each program stands on its own for development and implementation, a comprehensive integration plan insures the appropriate linkages exist to permit access and data communication between systems. The life cycle costs, planned management improvements and estimated savings that will result for each specific system are as follows.

a. Stock Control & Distribution (SC&D). The SC&D life cycle costs are $365 million. The primary objective of the SC&D system is to maximize the readiness posture of the Air Force. The broad objectives which contribute to improved readiness are as follows:

(1) Improve AFLC's visibility of assets permitting better distribution and control of available materiel resources.

(2) Improve AFLC's processes providing for more visibility of materiel in movement and provide for better utilization of transportation resources.

(3) Reduce the Order and Ship Times on customer requisitions.

(4) Provide accurate data to wholesale and retail managers upon request.

Tangible benefits in the amount of $14.4M in one-time reduction of pipeline spares as well as readiness improvements will be achieved.

b. Requirements Data Bank (RDB). The life cycle costs associated with the development of the RDB program are $369.5 million.

The management improvements and benefits (estimated savings) associated with RDB were documented in the Economic Analysis in 1982 and updated in 1985. The following is a summary of the improvements and savings documented in this study.

(1) Improved support to management by providing the capability to accomplish/evaluate resource allocation based on weapon system war readiness capabilities:

Tangible: $89.8M one-time safety level reduction

Readiness: Increase quantity of mission-capable aircraft by 175 aircraft equivalents. To achieve the same level of readiness (175), an investment of $2.7B would be required to procure the additional aircraft.

(2) Improved manpower efficiencies in budget preparation, POM forecasts, and special reports. Manpower efficiencies will be applied to validated command manpower shortfalls in other activities.

Intangible: $8.3M annually

(3) Improved accuracy of Budget/POM forecasts and item procurement and repair actions:

Tangible: $145M annually for reduction of unnecessary procurements.

Intangible: $68M one time in the asset value of items which should be in repair but are not.

(4) Benefits of improved strategic planning. AF top level management and planners decide on the defense objectives for the Air Force based on threat analysis as constrained by the amount of resources the nation can provide for defense. The RDB will provide these people with analytical and decision models to define and evaluate logistics resources alternatives for the PPBS process. The benefits for improvements in this area were not costed out in the RDB economic analysis.

c. Depot Maintenance Management Information System. The life cycle costs associated with DMMIS are $174.1 million. The repair of recoverable assets is critical to the operational effectiveness of field units. DMMIS will provide the capability to react to peacetime or wartime surge requirements, thus reducing repair turnaround time. Specifically, the system will:

(1) Increase workload visibility and provide critical information needed to accomplish scheduling, material control, and production functions. Current systems lack several key elements, such as material backorder status and parts shortage data.

(2) Increase timeliness. Due to current batch processing constraints, information provided by today's systems is at least one day old, and in many cases, 7-10 days old. The goal is to provide information which reflects the immediate situation, as reported by maintenance workers.

(3) Increase mission support productivity and reduce the amount of time required to report, access, and use system information. The goal is a 5% increase in productivity for system users.

(a) Data entry. Under current systems, basic reporting can consume up to 25% of a maintenance worker's time. DMMIS will reduce reporting and transaction follow-up time.

(b) Information access. Under current systems, most scheduling, material control, and production information is provided by 12 data systems which collectively generate over 300 different paper output products. When accessing information, considerable time is spent handling, searching, and storing these products. DMMIS will reduce the number of different data sources, the amount of time required to access information, and reduce paper outputs.

(c) Information processing. Current systems cannot satisfy the unique format, sequence, and computational needs of individual managers. Consequently, considerable time is spent manually preparing special extracts and summaries. DMMIS will satisfy unique format, sequence, and computation requirements through on-line report generation.

(d) Functional analysis. Under current systems, almost all random or discretionary analyses to discern trends, compare planned versus actual values, or identify items with certain repair requirements or other characteristics can require considerable time and effort. DMMIS will substantially increase functional analysis capability by reducing manual information retrieval and processing time.

(4) Increase scheduling effectiveness. On-line interactive capability will provide immediate answers to production scheduling questions such as status of parts, equipment, labor, etc., allowing the schedulers to effectively react to changing requirements.

(5) Increase material control effectiveness. The on-line, interactive capability will provide the material expediters and other material handlers with immediate status of parts requests, issues, and turn-ins. This improved material visibility will reduce the incidences of incorrect material movement and improve material projections to ensure the right parts are in the right place when they are needed. Backorder information will also be available to material control and production managers.

The estimated savings that will occur are: increased productivity—$77.8M (annual), pipeline spares reduction—$22.4M (one time), increased material control effectiveness—$.4M (annual), paper reduction—$7.8M (one time), reduced system modification cost—$5.2M (one time), reduced system operating cost—$38.9M (one time). Total savings are estimated to be $152.5 million.

d. Engineering Data Computer Assistant Retrieval System (EDCARS). The EDCARS life cycle costs are $79.7 million. Planned management improvements include: (1) remote transmission of engineering data providing engineering and maintenance technicians instant access to the data necessary to make major modification and battle damage repair decisions; (2) providing the Air Force the capability to receive digital engineering data from contractor technical information systems in lieu of paper/film, thus allowing the Air Force quicker access and distribution of engineering revisions/changes; (3) bid set automation capability that will allow the Air Logistics Centers to identify, collate, and distribute spare part bid set data quicker, providing critically needed repair parts faster and from more sources, thereby saving spares resources and improving war readiness; (4) wartime response capability which will allow the Air Logistics Centers to access backup data bases and to meet surge situations ensuring continuity of operations.

The estimated savings that will result from EDCARS are: an annual savings of $6.0 million through reduction of materiel and engineering/technician waiting time, and an annual savings of $14.3 million through improved and increased competition for spare parts procurement. Intangible savings result from reduced contract administrative lead time and reduction in stockpiling and pipeline costs.

e. Weapon System Management Information System (WSMIS). The WSMIS life cycle costs are $115.5 million. WSMIS will provide assessments of weapon system readiness and sustainability based on logistics support posture. Potential problems will be identified and isolated 60–90 days sooner than with existing systems. WSMIS enables Weapon System Program Managers to determine supply support trends, items causing support problems, deficits in item support, impacts of item problems on mission, cause of item problems, and remedial actions to take.

With WSMIS, AFLC managers can perform cost avoidance studies and reduce the time to perform weapon system readiness problem analysis by 50–75 percent. These studies now take form one week to two years. The time savings in performing these analyses is based on the accessibility and availability of information, automated trending capabilities, and the weapon system orientation of WSMIS. With existing systems, data must be aggregated, analyzed, and prepared manually from multiple hard copy sources. During ULCHI-FOCUS LENS 81 exercise, a limited test of the Sustainability Assessment Module was conducted at Ogden ALC. During that exercise, the supportability of the F-4G in one OPLAN scenario was evaluated. It was determined that a small number of spare parts limited the attainment of the sortie generation goals that were called for in that OPLAN. With this information, the F-4 System Program Manager developed and exercised the procedures to distribute or pre-position items to prevent the grounding of F-4Gs. This resulted in a 10 percent force multiplier.

The overall impact is greater when looking across all mission design series in each war scenario. WSMIS assists the logistics manager to predict how well units can execute and sustain planned combat generations in a wartime scenario. Approximately 80% of the personnel time spent collecting data, and other associated tasks inherent in the present manual system, will be used for recommending and resolving weapon system improvements and advocating required support actions. Logistic limiting factors identified by various assessment criteria will be automatically assembled into a centralized data file. Currently, there is no central source for problem items. Data required for logistics limiting items fault isolation, get-well plan development, and get-well plan monitoring will be readily available from the WSMIS unclassified database. Currently, the data must be extracted from different data systems resident on different computers. As a result, preparation of get-well plans will be reduced from 8 hours to 30 minutes.

f. Logistics C3I. The LOG C3I program funding was terminated beginning in FY87 based on offset requirements to fund higher priority AF needs. AFLC was directed to revalidate the requirement. Prior year funds totaled $13.7 million and are being used to develop a Battle Staff Management System. This system will provide secret level data communications connectivity between and within AFLC Battle Staff locations. It will also reduce the manual processing of messages, action item tracking, status reporting and record keeping tasks required whenever battle staffs are needed, i.e., exercise, contingency operations and full scale war.

The requirement to replace the existing DOD-wide Worldwide Military Command and Control System (WWMCCS) has been restructured into a separate program called AFLC WWMCCS Information System (WIS). This is consistent with other Air Force Major Commands' approach to WWMCCS replacement. The requirement will be submitted for funding through the POM process.

The requirement to provide a capability to assess AFLC's depot operations (infrastructure) to support specific warplans is being revalidated. The wartime execution functions of how the AFLC depot can be more responsive to operational unit logistics requirements are being analyzed by AFLC. As specific requirements are validated, requirements will be submitted in the POM.

g. Enhanced Transportation Automated Data System (ETADS). The ETADS life cycle costs are $10.7 million. The major systems components of the ETADS program are the overseas cargo movement shipment clearance/tracing functions; LOGAIR operation and management, including the payload/allocation and flight following functions; scheduled truck service management and operation; and support of the transportation financial management functions including airlift and sealift forecasting.

Overseas cargo clearance is currently accomplished manually using a preestablished set of criteria. ETADS will computerize this function. This will insure more consistent and responsive transportation support for our worldwide customers by allocating premium transportation modes to our highest priority requests.

ETADS will provide real time transportation pipeline data allowing the manager the capability to expedite, cancel, and or/divert assets as required to meet peacetime and wartime requirements.

The LOGAIR allocation/payload function is currently accomplished manually. ETADS will mechanize this process; available aircraft space will be allocated consistent with management policy-highest priority greatest distance. Mechanization of the allocation function will increase utilization of aricraft space which will result in a corresponding reduction in commercial transportation usage.

AFLC manages both first and second destination transportation fuuds. ETADS will provide real time transportation expenditure information thereby eliminating the need for the current $5.0M per year obligation safety factor. ETADS will also give AFLC the capability to obligate and liquidate transportation costs by individual transaction as required by DOD-D 7200.1.

h. Local Area Network (LAN). The LAN life cycle costs are $255 million. This program provides the intrasite communications backbone which is essential for the AFLC modernization program. The LAN will enable terminal-to-computer and computer-to-computer communications within each AFLC Air Logistics Center. The LAN will provide the medium required to achieve the benefits of interoperability between the modernization programs. The immediate access to the broad range of logistics data will permit the assimilation of information needed to sustain peacetime readiness and to react to changing combat conditions. In addition, the LAN will enable an orderly transition from batch to on-line processing and reduce the need for continual relocation of base telephone cable.

i. Intersite Gateway (IGS). The ISG life cycle costs are $38.1 million. The ISG provides the intersite telcommunications systems required for interface to AUTODIN and interface to DDN. As with the LAN, this program is essential for communications and interoperability between the modernization programs.

j. Contract Data Management System (CDMS). The CDMS life cycle costs are $79.3 million. The overall objective of the CDMS program is to design, develop, and install a single AFLC-wide contracting data management system to support AFLC's central acquisition mission. The system will be distributed geographically at the five ALCs and HQ AFLC, and will provide primary support to materiel management, competition advocate, and contracting and manufacturing.

CDMS contributes to the readiness of operational units by providing the critical link between AFLC and contract actions. Specifically, the system will provide real time status of spare parts on contract by weapon system. This will enable program managers to accurately identify spare part delivery schedules, so critical assets may be allocated effectively. CDMS will provide the capability to react to wartime surges and workload shifts. This translates into minimum disruption in the logistics pipeline and sustained support of combat operations. Additionally, the system will provide buyers, price analysts and managers on-line access to price histories, detailed spare part cost information, and on-line statistical analysis and modeling capability. These capabilities will improve spare parts pricing. CDMS complies with DOD MILSCAP standards, which will improve inter-service contract administration and data integrity. The system will also reduce processing leadtimes by automating the purchase request coordination process and eliminating manual interfaces on the current systems. These gains will help improve leadtime growth associated with recent legislation and changes in procurement law.

Question. Do you plan to have the MAISRC conduct such reviews in the future?

Answer. It is DoD's policy to conduct MAISRC reviews of Major Automated Information Systems (AIS) which meet the dollar thresholds of $100M from need through deployment or $25M in a single year or are of special interest to the department. However, I would add that while Milestones O and I decisions are retained at the OSD level, we may delegate Milestones II and III approval to the DoD Components provided that planning continues to be comprehensive and sound, an effective alternative for the requirement has been selected, the system continues to be developed within established schedules and costs, and that the program management structure and acquisition strategy remain sound and stable.

Question. What systems planning and review process will you establish for ADP logistics modernization programs to ensure interoperability, standardization, eliminate duplication, and accomplish integrated systems planning?

Answer. The planning and review process operates at three levels: (1) The first level involves the review of DOD Component Acquisition and Logistics systems modernization actions. The MAISRC is the principal process employed at this level, however, other non-MAISRC systems are also reviewed largely on the basis of perceived problems and deficiencies. Both of these review processes provide a useful base for ensuring that new or modernized systems incorporate OSD policies and are coordinated with related systems development. Although these reviews of individual systems are highly useful for large scale logistics modernization efforts, it does not accommodate the small to medium scale (low dollar threshold) logistics systems modernization efforts. To strengthen these processes and better ensure appropriate interoperability and standardization, we also intend to review logistics modernization plans being developed by the Defense Components. Such plans should provide a clearer sense of the future of logistics systems and enhance efforts to look across systems both within and among DOD Components. (2) The second level involves joint DOD projects to improve Acquisition and Logistics systems. These projects are limited in scope in that they address common needs in a specific area of interest. Computer Aided Logistics Support (CALS); Modernization of the Defense Logistics Standard Systems (MODELS) and Weapons Systems Management (WSM) are examples of such efforts. Projects of this kind emphasize common approaches to common problems. They aim at improving readiness, performance and productivity by applying modern technology and standards to improve the quality and timeliness of data collection, sharing and interchange throughout the DOD and between DOD and industry. (3) At the third level we are now taking a broader perspective which looks across the systems being reviewed at level I and the Defense-wide projects being conducted at level II. The objective is to establish a strategic Acquisition and Logistics Information Systems plan to ensure that systems modernization proceeds on a coherent, coordinated and prioritized basis. Such a plan will provide common direction and a comprehensive view of where Acquisition and Logistics should be going over the next ten years. This plan will also reflect what needs to be done and indicate how programs and projects are being developed and coordinated to achieve these requirements. This plan will focus on meeting the long range needs for more efficient, effective and productive acquisition and logistics support.

The ASD for Acquisition and Logistics (A&L) is in the process of establishing a focal point to coordinate and oversee the planning and review for Acquisition and Logistics systems. This focal point will pull together both functional and technical policy and direction within the Office of the ASD to ensure that future A&L systems develop on a coordinated basis, take full advantage of modern technology and provide responsive and productive support to A&L managers.

Question. What directives have been issued to the military services for coordinated system development of logistics modernization initiatives?

Answer. There is a network of existing and "in process" directives and instructions in the Defense Department logistics system which require the use of standard codes, formats, interface procedures, and system development procedures. These directives and instructions define the parameters within which logistics modernization initiatives at the Department of Defense, military service, or defense agency levels can occur. Some representative examples from the extensive list of directives and instructions which fall into this category are: Department of Defense Directive 4000.25 which established and governs the management of the fourteen Defense Logistics Standard Systems, Department of Defense Instruction 5000.12 governing data elements and data code standardization procedures, and the as yet unnumbered Department of Defense Instruction establishing defense-wide standards for bar code marking and reading.

Question. Please cite specific examples of the Defense-wide initiatives aimed at coordination and improvement of logistics modernization programs and explain how they improve compatibility, accuracy, timeliness and efficiency.

Answer. Specific Defense-wide initiatives in the logistics area which are currently in progress include: Modernization of the Defense Logistics Standard Systems (MODELS) project, the Logistics Applications of Automated Marking and Reading Symbols (LOGMARS) project, the Computer Aided Logistics Support (CALS) project, the Electronic Data Interchange (EDI) project, and the Secondary Item Weapon System Management Program (SIWSMP). The MODELS project is a complete redesign of all of the existing Defense Logistics Standard Systems. The current standard systems are based on the technology of the late 1950s and early 1960s. Although the standard systems have been the backbone of the logistics process for over twenty years, system saturation and the need for greater flexibility, combined with the technology revolution in data processing, created the need for the MODELS project. LOGMARS is the Defense Department's standard for bar coding and reading. Since its initiation, the LOGMARS technology has been incorporated in a variety of logistics applications ranging from shipping and transportation documents to laser-etched bar codes on small arms for serial number control. LOGMARS allows the elimination of one element of human intervention in the logistics process; increased accuracy of records plus savings in time are the main benefits. CALS is part of the technology revolution in the technical data area and is the logical derivative of major standardization efforts in computer-aided design and manufacturing. The automated interchange of technical data, when fully implemented, will fill a large gap in logistics systems which has caused processing delays and pricing problems in the past. EDI, like CALS, is a project being jointly accomplished with industry. EDI involves the electronic interchange of pricing, ordering and invoicing data thus eliminating a significant amount of human intervention, delays and inaccuracy. The Secondary Item Weapon Management Concept is an initiative consisting of several basic changes to the way that weapon system items are managed. The principal change is a revision to the primary focus of the logistics process from components to end items, or weapon systems. All of the basic elements of the logistics process will be re-oriented by this effort to focus more intense management on the total readiness of the items supported than on the percentage of availability of component parts.

Question. Who is the OSD official responsible and accountable for direct control and coordination of these initiatives?

Answer. Dr. James P. Wade, Jr., Assistant Secretary of Defense for Acquisition and Logistics, is the OSD official responsible and accountable for all initiatives in the logistics area.

Question. What logistics ADP replacement or upgrade initiatives are planned or are underway that will not have a MAISRC review?

Air Force answer. Currently, AFLC has three major ADP modernization initiatives in progress that are not scheduled for MAISRC review. These are: (1) the Automated Technical Order System (ATOS); (2) the Central Procurement Accounting System (CPAS); and (3) the Reliability and Maintainability Information System (REMIS).

The ATOS program automates the creation of technical order (TO) change pages in camera-ready copy, provices for distribution of complete TOs in digital format among the ALCs and AGMC and to the maintenance shops, and provides for a base-level distribution prototype for the B1B.

CPAS will greatly improve the central procurement mission, Foreign Military Sales, command reporting, and budget distribution and control.

REMIS supports the functional components of equipment inventory, status and utilization, product performance, generic configuration status and acccounting, and mission capability and awaiting parts, as an integrated system. This program will improve the availability of accurate (validated at input source) reliability and maintainability (R&M) data for all levels of Air Force technical management.

Army Answer. AFMIS, SARSS, SAMS, SAACONS, DAMMS, DASPS-E, TC ACCIS, SAAS-4, SPBS-R.

Question. What is the cumulative dollar amount for them?

Air Force answer. The acquisition costs for these programs are: ATOS—$76.6 million, CPAS—$9.3 million and REMIS—$53.4 million

Navy Answer. Logistics improvements currently underway within the Navy are reflected in the 43A Budget Exhibit.

Army Answer. Cumulative dollar amount (Life Cycle) of the logistics modernization systems identified previously is approximately $867M.

Question. Are the services efforts to modernize their supply and maintenance systems a duplication of effort?

Answer. No. Although all management systems contain some degree of duplication in that they process transactions, make calculations or produce output products, this is not indicative of duplication in an overall sense. The supply and maintenance modernization efforts of the Military Services are designed to meet the unique requirements of the separate military missions. From a logistics systems perspective this means that supply and maintenance systems are tailored to supporting specific needs, e.g., shipboard stockage for Navy materiel, fixed location bases for Air Force, or mobile Army combat units. No single system to support the myriad of supply or maintenance requirements of all Services is remotely feasible today or in the foreseeable future. Nor is such a system desirable since it would necessarily involve at "least common denominator" approach to meet even the minimum requirements of the vast Defense logistics establishment. The Department does identify and use common system specifications in those areas which are truly common. DoD has developed a single item catalog and 14 Defense Logistics Standard Systems (DLSSs) which encompass most of the common functions and interface among the Services. The development of these systems is accomplished through joint Service cooperation and is closely monitored by OSD. OSD officials minimize duplicative efforts in the Services' logistics systems modernization programs by continuous oversight of the implementation of these systems through management briefings, site visits and Inspector General/GAO Reports.

Question. How does the above named official make this determination?

Answer. Although many systems are Service-unique, they must be developed consistent with general OSD policy issuances. This development is watched closely by the OSD staff. In the case of the DLSS, OSD closely reviews all proposed revisions to insure duplication is minimized.

Question. What specific written directives has this OSD official given lately to synchronize these initiatives?

Answer. Although Dr. Wade is the responsible official for logistics in the Defense Department, major logistics initiatives are initiated not only at his level. Programs also begin at the Secretary of Defense, Deputy Secretary of Defense and Deputy Assistant Secretary of Defense levels. The Modernization of Defense Logistics Standard Systems project was initiated by memorandum from the Deputy Assistant Secretary of Defense for Logistics and Materiel Management on March 12, 1984. The Logistics Applications of Automated Marking and Reading Symbols Department of Defense Instruction, currently being staffed, will be issued under Dr. Wade's authority upon completion of staffing. The Computer Aided Logistics Support project is being conducted by Dr. Wade's staff; a report on the project was recently forwarded by Dr. Wade to the Committees on Appropriation of the United States House of Representatives and the United States Senate. The Secondary Item Weapon System Management program was initiated in May 1985 with the issuance of a concept paper approved by the Secretary of Defense; the concept paper and the ongoing management of the program are Dr. Wade's responsibility. Other recent actions with significant impact on the various modernization projects in logistics are: the February 20, 1986 memorandum from the Deputy Secretary of Defense which clarified the management responsibility for general purpose automatic data processing systems and the March 26, 1986 Assistant Secretary of Defense, (Comptroller) memorandum which further articulated the responsibilities assigned by the February 20, 1986 memorandum.

Question. Specifically, what OSD guidance has been issued on the Navy's $1.76 billion SPAR/SPLICE program?

Answer. Provisions have been made for SPAR/SPLICE to interface with the Defense Automated Addressing System utilizing the

Military Standard Logistics Systems (MILS) prescribed by Department of Defense Directive 4000.25.

Question. How does OSD expect SPAR and SPLICE to be interoperable with other DOD logistics systems?

Answer. The MILS provide the mechanism to facilitate interchange and compatibility of logistics data among users of the DOD logistics systems.

Question. What logistics ADP replacement or upgrade initiatives are planned or are underway that will not have MAISRC review?

Answer. The following logistics initiatives approved by ASST-SECNAV FM OP-945 or NAVDAC are underway (MENS approved) which will not have MAISRC review.

Question. What is the cumulative dollar amount for them?

Answer.

Initiative	Life Cycle Cost
Fleet Modernization Program Management Information System-Phase 2 (FMPMIS-PH2)	$68.5M
Fleet Optical Scanning and Marking System (FOSAMS)	$30.7M
Naval Shipyard Terminal Replacement Contract	$21.0M
SEABEE Automated Mobile Management System (SAMMS)	$12.4M
Source Management of Resources and Time (SMART)	$76.7M
TRIDENT Logistics Data System	$477.1M
Automation of Procurement Accounting Data Entry (APADE)	$134M
Printing Resource Management Information System (PRMIS)	$28.6M
Conventional Ammunition Integrated Management System (CAIMS)	$30M
Management Action Reporting System/Airborne Weapons Corrective Action System (MARS/AWCAP)	$34M
Metrology Automated System for Uniform Recall and Reporting (MEASURE)	$36M
Naval Avionics Center Central Computer Facility (CCF) Replacement	$32.1M

ARMY ADP SYSTEMS

Question. According to last year's testimony, the Army has 15 major ADP systems under development whose life cycle costs exceed $7.6 billion. In 1984, Army auditors reported that Army ADP planning and budgeting procedures were inadequate.

Mr. Springett, how many Army ADP systems have been formally reviewed and approved by the OSD's Major Automated Information Systems Review Council?

Answer. While we have not held a recent OSD MAISRC milestone review of an Army system, we have had a number of staff level reviews of Army programs, including the Army Civilian Personnel System (ACPERS), the Continental Army Management Information System (CAMIS), and Vertical Force Development Management Information System (VFDMIS). In addition, we have required that the Army bring both CAMIS and VFDMIS in for MAISRC review. During Army's preparation for the CAMIS and VFDMIS MAISRC's, it became clear to both Army and OSD that there were significant problems and risks associated with these programs. The Army independently acted to cancel the RFP's, prior to the MAISRC reviews. By canceling these RFP's, the Army rendered its own programs unexecutable. We will conduct MAISRC reviews when Army has restructured its programs and is ready for OSD review.

Question. If none, why?

Answer. Although, we have not held a formal MAISRC milestone review, we have held a number of staff level reviews of Army systems. Specifically, we were working with the Army to prepare for MAISRC milestone reviews for CAMIS and VFDMIS. However, prior to these MAISRC's taking place, Army independently cancelled the RFP's for these two systems, thereby making CAMIS and VFDMIS unexecutable.

Question. Mr. Springett, the Committee understands that during the last budget process, you eliminated two major Army programs: the Continental Army Management Information System (CAMIS) and the Vertical Force Development Management Information System (VFDMIS). These systems were forecast to have life cycle costs of $.7 billion and $1.8 billion respectively. Why did you eliminate these programs?

Answer. During the last budget process, funds for both CAMIS and VFDMIS were deleted without prejudice, following Army's cancellation of the RFP's for both programs. By canceling these RFP's, the Army rendered its own programs unexecutable. Enough funds were left in CAMIS for FY 86 and FY 87 to allow the program office to plan for a replacement program. We will conduct MAISRC reviews when Army has restructured its programs and is ready for OSD review.

Question. Are the requirements for these systems still valid?

Answer. We believe that the requirements for CAMIS are still valid, and we are supportive of the Reserve Components needs for automation.

Question. How will these requirements now be satisfied?

Answer. The Army is reassessing the programmatic directions for CAMIS. We do not yet know what the revised CAMIS program will look like. However, we are working with the Army, and we are prepared to hold a CAMIS MAISRC as soon as the Army is properly prepared.

Question. Mr. Springett, do you believe that the Army has an effective ADP planning process?

Answer. I have been concerned with the fact that so many Army procurements have not reached fruition. It is my understanding that Army has established a new information system planning process. From the problems that we have found during the staff review of selected Army programs, it is evident that the new planning process has not yet stabilized. Additional work needs to be done so that the problems that we are now seeing are not repeated.

Question. If so, how are your actions to terminate two major Army programs indicative of effective Army planning?

Answer. It is clear that additional work needs to be done to stabilize the Army's new planning and management process.

Question. Mr. Springett, given the known history of problems with the Army's ADP program, what actions do you plan to take to correct them?

Answer. OSD has recently sent the Army firm direction to take specifc, timely actions to correct these problems. Specifically, we have directed the Army to:

Establish an accountable executive level management oversight process, patterned after the MAISRC, as outlined in DoDI 7920.2;

Promptly schedule MAISRC reviews, and to share facts and analyses at the staff level, early in the MAISRC preparation process.

Cease applying Army architectural specifications to ongoing procurements until such requirements have been analyzed, documented, and briefed to OSD.

Question. What specific plans does the Comptroller have to strengthen the management oversight and control over the Army's ADP program?

Answer. We have directed the Army to establish an executive level management oversight process, patterned after the MAISRC; to schedule MAISRC reviews promptly, and to share facts, documentation, and analyses at the staff level; and to stop applying architectural specifications to ongoing procurements until such time as the requirements have been analyzed, documented and briefed to OSD.

Question. Were the life-cycle management principles that represent a solid foundation for managing large information systems applied to the Army's CAMIS? VIABLE? VFDMIS? Project 80-X? TACCS? Describe the results that were achieved by emphasizing early planning and problem resolution, program accountability, and executive oversight as they apply to each of the named systems.

Answer. The principles of life cycle management as outlined in DoDD 7920.1 and DoDI 7920.2 are not fully applied to these procurements. However, recent Army actions indicate that strict adherence to these DoD policies will be used by the ASA(FM) in the future.

Question. The Committee understands that the key to successful fielding of information systems is through the disciplined approach called "Life Cycle Management." Mr. Springett, please briefly describe the life cycle management concept.

Answer. The DoD life cycle management policy is intended to be an interface between a management decision-making process and a technical automated information system development process. We believe that certain key management issues must be addressed in a methodical and somewhat inflexible manner. On the other hand, the technical options provided by the policy are quite varied. We want program managers and the vendors who support them to use their full initiative in a competitive process to develop the most cost effective systems we can get.

The following chart highlights some of the key decision issues and management planning areas which OSD reviews.

BLANK PAGE

BLANK PAGE

BLANK PAGE

Overview of the Major Automated Information System Review Council Decision Making Process

	Milestone 0 Mission Element Need Decision	Milestone I Concept Decision	Milestone II Definition & Design Decision	Milestone III Deployment and Operation Decision
PURPOSE	Decide what we want	Decide how to do it	Decide if the design is OK	Decide if the system is OK
MAJOR AREAS FOR DECISION	Mission need Priorities Affordability constraints Timing	Program management concept Functional alternatives considered Development approach Architectural alternatives Acquisition strategy Preliminary cost benefit Initial cost estimate - funding	Specification sign-off by functional proponent & technical managers Analysis of technical risks Full cost benefit analysis - ROI Firm baseline Requirements Cost Schedule Full funding for program	System fully developed and tested Risk analysis updated Cost benefit validated Baseline updated Full funding for program
OSD REVIEW ACTIONS	Review: Validation of need by OSD functional sponsor Adequacy, specificity, and quantification of deficiencies and goals	Review: Areas described above Preliminary plans for training, logistical support, configuration management, test and evaluation Functional descriptions Telecommunications requirements Computer security requirements	Review: Areas described above Plans for training, logistical support, configuration management, test and evaluation completed Implementation of configuration management	Review: Areas described above System documentation Implementation plans updated Conformance to requirements End products under configuration control Business plans - delivery rates, quantity options, etc.

Question. Do all the Services use the same definition of "life cycle" in their system documentation and budgets?

Answer. No, I believe that there is a certain amount of variance in the detailed interpretations of the DoD policy.

Question. How important is preparation of a "system decision paper" as part of life cycle management?

Answer. The system decision paper is very important. It is the key management decision making in-put. Each program must be communicated in an efficient summary form for OSD decisionmakers. Since the functional areas, the requirements, the environments, technological opportunities, technical development strategies, hardware and software architectures, acquisition strategies, and so forth are so varied, the development of an effective system decision paper is very difficult. We not only want to understand these issues, but we also want to understand the various options that were considered, the rationale for the proposed course of action, why it is believed to be the most cost effective course, and what the managerial and technical risks are.

Question. Mr. Springett, why have you failed to require system decision papers on the following Army programs: Commodity Command Standard System Modernization ($765 million); Keystone ($236 million); Headquarters Integrated Office System ($100 million); and Tactical Army Combat Computer System ($2.3 billion)?

Answer. A system decision paper is required when a specific system is submitted for MAISRC review. OSD does not review all major automated information systems, but delegates the decision-making process to the Defense Components in many cases.

The Components are required to implement a decision-making process which applies the principles of life cycle management to those major automated information systems which have been delegated, as well as to those which are of even a lesser magnitude. Therefore, a document which serves the purpose of a system decision paper is required in each of the cases which you have identified.

TACCS was reviewed by the Computer Resources Council (CRC) and was not required to prepare a specific system decision paper for the In-Process Review. TACCS documentation to suport the review had been developed by the Army for internal reviews conducted immediately before the CRC.

Question. Provide for the record all DOD major automated information systems for which no systems decision paper existed on April 1, 1986.

Army answer. The following major automated information systems did not have an SDP on April 1, 1986:

Tactical Army Combat Service Support Computer System.

Unit Level Computer System (Decision Coordinating Paper).

Corps Theater ADP Service Center.

Army WWMCCS Information System (Decision Coordinating Paper).

Standard Depot Systems (SDP under Development for Milestone I).

Keystone (REQUEST/RETAIN was renamed as Keystone. REQUEST/RETAIN had an SDP).

Question. What does this lack of documentation imply about the Department's ADP management discipline?

Army answer. This does not imply a lack of management discipline. All Army major automated information systems are subject to Life Cycle Management principles, including milestone review and approval by the designated approval authority, regardless of the particular regulation governing their development. Tactical and strategic systems have been developed under DODD 5000.1 and related regulations rather than DODD 7920.1. These regulations also require life cycle documentation, appropriate to the type and size of the system, and milestone review and approval by the designated Army or OSD authority.

The term "System Decision Paper" (SDP) is used to describe the vehicle which presents supporting documentation to the approval authority under DODD 7920.1 and AR 18-1. Similar documents exist under different names within the other regulations which are applicable to management of major programs and systems, such as Decision Coordinating Papers under AR 70-1. The information contained within these varied documents addresses the same Life Cycle Management concerns as those within an SDP and these documents are used as a basis for management review and approval of the system at decision milestones.

CONTINENTAL ARMY MANAGEMENT INFORMATION SYSTEM (CAMIS)

Question. The Committee understands that the Army's CAMIS program, in particular, is absolutely critical for the Army to be able to mobilize its reserve forces during wartime. The Army has spent $47.6 million to date to develop the CAMIS system.

Mr. Springett, are you satisfied with the Army's current approach for automating Army Reserve Components?

Answer. The Army is reassessing the programmatic directions for CAMIS, following the cancellation of its RFP, and the subsequent deletion of funds during the last budget cycle. We do not yet know what the revised CAMIS program will look like.

Question. What did the Congress get for the $47.6 million investment in CAMIS appropriations to date?

Answer. The CAMIS Project involves the application of emerging technology to overcome the problems of managing and mobilizing a diversified and geographically dispersed Reserve Component. It is designed to support FORSCOM's mobilization mission which currently is hampered by the lack of sufficient ADP support.

The $47.6 million investment to date has provided the following:

a. A detailed analysis using Problem Statement Language/Problem Statement Analyzer (PSL/PSA) of the exact mobilization and force management automated information management requirements of the Army's Reserve Components.

b. A functional architectural design of an ADP interactive network to facilitate both the day-to-day management of the Reserve Components and what is required to enable the Army to mobilize these forces in a timely and effective manner.

c. Systems Engineering and Technical Support (SETS) contract support from Rehab Group Incorporated which provided and maintained the functional design and functional description of CAMIS and assisted the Project Manager with general project management support. The cancellation of the SETS contracts, due to DOD-directed funding cuts, has left a gap in the completion of the SETS support for mobilization requirements incorporating changes dictated by the evolution/redefinition of the Army's information management architecture.

d. The validation of CAMIS concepts and methodolgy through the Developmental Army Readiness and Mobilization System (DARMS). DARMS is a functioning network of microcomputers linking the five CONUSA headquarters, FORSCOM, NGB, State Area Command (STARC), Major U.S. Army Command (MUSARC), General Officer Commands (GOCOMS), Army Reserve Personnel Center (ARPERCEN) and the 54 mobilization stations, providing limited operational capability to support the RC mobilization mission. The software developed and information gathered through use of DARMS provides assistance to CONUSA's in the form of ADP support and allows the testing of concepts and methodology involved in developing CAMIS. The Reserve Component still requires the implementation of CAMIS to meet its mobilization needs. The automation capability for the Reserve Component is the key for mobilization cross-leveling, training, and deploying the reserve force.

Question. In December, 1982 CAMIS was estimated to have a life cycle cost in excess of $600 million. Why was no MAISRC review held in 1983?

Answer. In a 1981 memorandum to OSD the Army had classified CAMIS as a system that was exempt under the Warner Amendment. Therefore, this system was not subject to review by the MAISRC.

Question. In 1984?

Answer. According to Army, CAMIS was a system that was exempt under the Warner Amendment, consequently, the system was not subject to a MAISRC review.

Question. In 1985?

Answer. During the FY 1986 budget review, we became aware that CAMIS met the MAISRC criteria and was being acquired under the Brooks Act (P.L. 89-306). In November 1984, we directed the Army to bring CAMIS in for a MAISRC review. We conducted a number of staff level reviews on CAMIS in the fall of 1984 and spring of 1985, in preparation for the MAISRC.

Question. Did the Comptroller ever review a Systems Decision Paper for CAMIS, and if so, what action was taken on it?

Answer. We have not formally reviewed a System Decision Paper for CAMIS. Since Army has been reassessing and restructuring the CAMIS program, we are now awaiting Army's submission of appropriate documentation for the new CAMIS program.

Question. Why did OSD allow the CAMIS request-for-proposals to be sent to industry for a $600 million system without a MAISRC review?

Answer. We were not aware of the magnitude of the CAMIS program until the budget review cycle in the fall of 1984. Until March of 1984, Army contended that CAMIS was not a MAISRC system. The RFP was released to industry in July 1984. The ASD(C) has directed that the CAMIS program will be reviewed by the MAISRC prior to any new solicitation going to industry.

Question. Do you intend to have a competitive acquisition to fulfill this requirement?

Answer. Yes, we do.

Question. Do you believe that a stand-alone system that connects to the main Army system, known as VIABLE, is not possible?

Answer. A stand-alone CAMIS system that connects to VIABLE is possible; however, such a system only duplicates capabilities which are providing to the Active Army many of the same services which CAMIS is to provide for the reserve components.

Question. Do you plan to approve a sole-source solution to this requirement?

Answer. No. We do not.

Question. Will you require a formal cost-benefit analysis?

Answer. Yes, we will.

Question. The Committee understands that the Army would like CAMIS to be exempt from OSD MAISRC review. Mr. Springett, do you consider CAMIS to be a special interest item that will be subject to recurring OSD oversight?

Answer. I believe that CAMIS is a program that will require OSD oversight. ASD(C) has informed the Army in a clear and direct manner on many different occasions that we expect CAMIS to be reviewed by the OSD MAISRC.

Question. If not, what would it take to convince you of the Committee's interest in this program?

Answer. We are sensitive to the Committee's interest in this program. In December 1985, we formally advised the Army to bring the CAMIS program in for MAISRC review and approval, when CAMIS is restructured or a new program is developed to satisfy its requirements.

Question. Mr. Springett, Congress has provided funds for an interim ADP system known as the Developmental Army Reserves Management System (DARMS). Do you have any plans to expand DARMS to fill the void caused by your decision to terminate CAMIS?

Answer. DARMS will not expand to fill the void caused by the termination of CAMIS. DARMS is a temporary system that will be absorbed into CAMIS when CAMIS is fielded. Currently, DARMS has reached its funding ceiling and cannot be expanded without authorization from DA.

Question. Provide the amounts budgeted in each fiscal year 1985 to 1987 by appropriations for DARMS. Indicate what funds are planned for DARMS upgrades or expansion.

Answer. The amounts budgeted for DARMS are:

[In millions of dollars]

	1985	1986	1987
OMAR	3.6	3.6	3.6
MPA	2	2	2
RPA	1.6	1.6	1.6

[In millions of dollars]

	1985	1986	1987
Total	5.4	5.4	5.4

No funds are planned for DARMS upgrades or expansion.

Question. Why are FY 1987 funds even necessary?

Answer. Funds for FY 1987 are necessary only for the operation and maintenance of DARMS.

Question. The Committee's 1986 report provided specific mandatory guidance that no funds appropriated for CAMIS in either procurement or operation and maintenance appropriations may be used for any other purpose without prior written approval from the Committee. Mr. Springett, have you followed our instructions?

Answer. Yes. Although the Department no longer plans to obligate the total amount appropriated for CAMIS in the Operation and Maintenance title, the excess funds will not be used for another Army program, but will constitute a portion of those funds sequestered under P.L. 99-177.

Question. For the record compare the amounts in all appropriations for CAMIS in the current budget request to last year's budget to Congress.

Answer. The current budget request follows:

[In millions of dollars]

	1986	1987
OMAR	5.5	5.5
RPA	1.6	1.0
OPA	0	0
OMA	0	0
OMNG	0	0
NCPA	0	.6
MPA	.2	.2
Total	7.3	7.3

Last year's budget request was:

[In millions of dollars]

	1985	1986	1987
OMAR	8.1	21.1	26.4
RPA	.8	1.0	1.2
OPA	19.2	0	23.1
OMA	.3	.3	.3
NGPA	0	0	.6
MPA	.2	.2	.2
Total	28.6	22.6	51.8

Question. The Committee earlier this year asked Secretary Marsh this question, but he either could not or would not answer it. So the Committee would like your opinion, Mr. Springett. How is it cost effective to attempt to satisfy CAMIS requirements on VIABLE?

Answer. The Army is currently rethinking their approach to satisfy the CAMIS requests. The results of their efforts have not been made available to OSD. However, they will be presenting the CAMIS program for MAISRC reivew within the next several months.

Question. What Army organizations were responsible for CAMIS before its demise? What organizations are responsible for the CAMIS follow-on effort?

Answer. Previous Army organizations responsible for CAMIS were Office, Chief Army Reserves; Office, Deputy Chief of Staff for Operations (ODCSOPS-ODM); Army National Guard; Assistant Secretary of the Army (Manpower and Reserve Affairs) (ASA(M&RA)); Assistant Secretary of the Army (Research, Development and Acquisition) (ASA(RD&A)); Assistant Secretary of the Army (Financial Management); Assistant Chief of Staff for Information Management (ACSIM); US Army Information Systems Command (USAISC); US Army Finance and Accounting Center and US Army Reserve Component Personnel and Administration Center.

Current organizations responsible for CAMIS are Office, Chief, Army Reserves; National Guard Bureau; Office, Deputy Chief of Staff for Operations (ODCSOPS-ODM), Assistant Secretary of the Army (Financial Management) (ASA(FM)); Assistant Secretary of the Army (Manpower and Reserve Affairs) (ASA(M&RA)); Assistant Chief of Staff for Information (ACSIM); Deputy Chief of Staff for Research Development and Acquisition (DCSRDA); US Army Forces Command, Secretary of the Army and US Army Information Systems Command.

Question. How does the current CAMIS office relate to the STARNET program management?

Answer. The CAMIS Project is now separate.

Question. Is it independent?

Answer. Yes. That is my understanding.

Question. Who is accountable for the CAMIS requirement now?

Answer. CAMIS is the responsibility of the newly designated CAMIS Project Manager who reports directly to Commander, U.S. Army Information Systems Engineering Command (USAISEC).

Question. Is there now a master plan for the CAMIS requirement?

Answer. The Army is rethinking their approach for CAMIS.

TACTICAL ARMY COMBAT COMPUTER SYSTEM

Question. The Tactical Army Combat Computer System (TACCS) envisions buying approximately 14,000 commercial off-the-shelf computers which will be "ruggedized" for use in the field by Army combat units.

Mr. Springett, last year OSD testified that the life cycle cost for TACCS would be $350 million. GAO, however, tells us that your current estimate of TACCS life cycle costs is $2.3 billion.

What happened?

Provide for the record the basis for the new life cycle costs and the reasons for the dramatic cost growth.

Question. What problems have been indicated by Army Audit Agency and DOD Inspector General reviews of TACCS?

Provide details for the record.

Question. What concerns did the Computer Resources Council raise?

What is the Army's response?

Question. What instructions were provided to the Army concerning the rate at which the TACCS program may proceed?

Provide for the record the quantities and amounts originally requested from Congress in fiscal years 1985, 1986, and 1987; the currently programmed quantities and amounts; and the amount of funds that are forecast to be obligated by September 30, 1986 in each fiscal year based on the current rate approved by the CRC. What is the impact on FY 1987?

Answer. The following information is provided in response to the questions on the TACCS program. TACCS is a two person portable, ruggedized, commercially available, general-purpose microcomputer system to automate multiple standard personnel, logistics and medical functions in Combat Service Support (CSS) units from the battalion through the theater Army. So far over 500 TACCS have been fielded worldwide, to both tactical and non-tactical units, in a variety of geographical locations. Feedback from all units on system performance and survivability has been very positive. The TACCS program is being reviewed by the Army Audit Agency (AAA) as part of a DOD-wide Audit of Mobilization Readiness of Automated Combat Service Support Systems. AAA has identified potential problems in the areas of system development, testing, acquisition and fielding. The Army is preparing a response which addresses all AAA concerns.

The $350 million life cycle cost figure presented last year was not accurate. The $2.3 billion figure is from a 16 December 1982 estimate, and is stated in inflated dollars. The 1982 figure represents a requirement for far fewer TACCS than the Army now requires, contains no software costs and assumes a procurement cost for each TACCS that was three times higher than what was finally negotiated.

CECOM is reaccomplishing the Life Cycle Cost Estimate (LCCE). Validated results should be available NLT 1 August 1986. The revised estimate will include software and computer equipment life cycle costs for all functional systems that are projected to process on TACCS, approximately 14,000 systems, over a 10 year life cycle. Applications utilizing 9000 TACCS now constitute the approved program. Additional applications will be submitted for approval over the programmed life cycle.

An OSD Review Council conducted a review of the TACCS program on January 29, 1986. Below is listed a summary of their concerns. The MAISRC will meet this fall to review Army progress and readiness to proceed to full production.

a. Insufficient operational testing and evaluation under garrison and field conditions.

b. Lack of full funding necessary to execute the approved program.

c. Lack of Economic Analysis, with supporting Life Cycle Cost Estimates, for all the application systems approved to use the TACCS.

d. Need to strengthen the management relationships and coordination between TACCS and the application programs.

e. Lack of a current computer resources plan.

f. Need to complete an evaluation of a Value Engineering Change Proposal to remove TEMPEST.

g. Lack of an analysis of alternative maintenance concepts.

h. Need for the Army to adjust their acquisition strategy to provide an option to recompete contractor maintenance.

The Army has taken immediate action to respond to each of the eight concerns raised by the review. Following the review, OSD (recognizing the overall need for automation in the CSS arena) authorized the Army to execute its contract option with the TACCS contractor. Production was capped by OSD at 60 systems per month, with a max of 600 systems, pending resolution of outstanding issues.

The quantities and amounts in the 1985 President's Budget for the procurement of TACCS are shown below.

	FY85	FY86	FY87
Qty	173	473	776
AMT ($M)	12.3	35.3	60.1

The quantities and amounts in the 1987 President's Budget for the procurement of TACCS are shown below.

	FY85	FY86	FY87
Qty	895	2185	1960
AMT ($M)	20.7	44.6	42.9

The TACCS OPA obligations to date are shown below.

Fiscal year:	*Millions*
1985	$16.1
1986	0

The requirement to complete operational testing of TACCS prior to deployment has resulted in a continuation of a limited rate of production during FY 1986. The MAISRC approved an additional five months of limited production authority in June 1986, which will permit obligation of funds for an additional 300 systems. However, full production awaits completion of testing and a program review by MAISRC this fall. When the full production issue is resolved the impact on FY 1987 can be determined.

Question. What OSD organization is reviewing this system?

Answer. TACCS was reviewed in January 1986, by the Computer Resources Council, due to the fact that TACCS was considered a general purpose mission critical automated information system (AIS). Subsequent to the direction of the Deputy Secretary of Defense on February 20, 1986, all reviews of general purpose AIS's will be conducted by the MAISRC.

Question. Mr. Springett, what specifically is your role?

Answer. I served as the Executive Secretary of both the CRC and the MAISRC, ensuring that staff preparations for the meetings were complete and prepared the Systems Decision Memoranda for the principals. I will continue in that position for the consolidated MAISRC.

Question. Why would the MAISRC not be involved?

Answer. Review of mission critical general purpose major automated information systems (AIS's) was previously a responsibility of the Computer Resources Council. A review of TACCS was held in January, 1986.

On February 20, 1986, the Deputy Defense Secretary of Defense consolidated the responsibility to review all general purpose AIS's under the Comptroller, who is responsible for the MAISRC process. The MAISRC will be reviewing TACCS later this year.

UNIT LEVEL COMPUTERS

Question. The Army plans to buy approximately 44,000 unit level computers which will be "ruggedized" for use in the field by Army combat units at the company level.

Mr. Springett, last year OSD testified that the life cycle cost for Unit Level Computers would be $631 million. GAO tells us that your current estimate of life cycle costs is $1.9 billion.

What happened?

Provide for the record the basis for the new life cycle costs and the reasons for the dramatic cost growth.

What problems have been indicated by Army Audit Agency and DOD Inspector General reviews of Unit Level Computers?

Provide details for the record.

What concerns did the Computer Resources Council raise?

What is the Army's response?

What instructions were provided to the Army concerning the rate at which the Unit Level Computer program may proceed?

Provide for the record the quantities and amounts originally requested from Congress in fiscal years 1985, 1986, and 1987; the currently programmed quantities and amounts; and the amounts of funds that are forecast to be obligated by September 30, 19[illegible] in each fiscal year based on the current rate approved by the CRC. What is the impact on FY 1987?

Answer. The following information is provided in response to the questions on the Unit Level Computer (ULC) program.

The Unit Level Computer will be a portable "small suitcase" size, off-the-shelf microcomputer with ruggedization provided via transit cases. It will be a generic piece of transportable ADPE hardware on which multiple standard Army applications and commercial off-the-shelf software will operate. The two standard Army applications currently approved by the Army to process on ULC are the Unit Level Logistics System (ULLS) and the Theater Army Medical Management Information System-Division (TAMMIS-D). The ULLS requirement is approximately 11600 systems, and TAMMIS-D requires 1400 systems. Additional hardware, for approved cost effective applications only, will be procured to support emerging requirements. Acquisitions will be limited to a three year period, with the ULC to be eventually replaced by the Army Command and Control System (ACCS) common hardware.

The Life Cycle Cost Estimate (LCCE) of $631 million reported last year was an early estimate based on a quantity of approximately 27,600 lap-top micorcomputers. The $1.9 billion LCCE figure (inflated dollars) GAO reported was based on a quantity of 34,798 lap-top computers, at an estimated cost of $12,000. Since then the acquisition has changed from a lap-top to a portable configuration, with substantial reduction in estimated unit costs. The hardware configuration for the field is expected to have a unit price of less than $4500. A new LCCE is being prepared by CECOM, based upon the reduced quantities and lower costs, and is scheduled to be available NLT 15 July 1986. The program is being reviewed by the Army Audit Agency (AAA) as part of a DOD-wide Audit of Mobilization Readiness of Automated Combat Service Support Systems. AAA identified potential problems with the original program in the areas of hardware development, testing, acquisition and logistics support. The Army is preparing a response to each of the AAA concerns. Current acquisition strategy is off-the-shelf to expedite fielding of automated capabilities in tactical units to achieve the effectiveness demonstrated in prototype tests.

The 1986 President's Budget request for OPA funding is shown below.

Fiscal year:	*Millions*
1985	$2.2
1986	5.5
1987	30.0

The acquisition strategy for ULC proposes approximately $7M will be required to procure 1100 configurations for schools and software developers. The remaining micros will be procured by units using their own funds since the low cost field configurations will be expense items (less than $5000). However, the program is still being reviewed, prior to release of the RFP, and the quantities have not been resolved.

The 1987 President's Budget request for OPA funding is shown below.

Fiscal year:	*Millions*
1985	$2.2
1986	5.5

To date, OSD has not conducted a review of the ULC program. Current planning calls for the FY85 and FY86 OPA funds to be obligated when the ULC contract is awarded. Contract award is anticipated during FY 1987.

ARMY SUPERCOMPUTERS

Question. Last year the Army requested both Armed Services and Appropriations Committees to add funds in fiscal year 1986 above the budget request for purchase of a supercomputer. Army projected eventually buying 6 supercomputers at a cost of $200 million. The Congress agreed to fund one supercomputer for $23.6 million, and the Committee requested DoD to submit a report on supercomputers DoD-wide by May 1, 1986 before considering the Army proposal to continue the program.

Mr. Springett, has OSD formally reviewed the Army supercomputer initiative in the MAISRC process?

Answer. No, there has been no MAISRC review of the Army supercomputer program.

Question. Do you plan to?

Answer: Yes, the Army supercomputer program has been added to our list of planned MAISRC reviews.

Question. Over $50 million is either appropriated to date or budgeted in FY 1987. Why does OSD allow great expenditure of funds, such as this, prior to formally reviewing the program?

Answer. The Army program has been evolving rapidly. As initially envisioned, only one or two supercomputers were to be acquired. Currently the Army has identified a much larger number of candidates.

There is a need to analyze the requirements for supercomputers in terms of the possibility of sharing to optimize utilization of these very expensive resources, and it may be feasible to consolidate the requirements for procurement purposes.

Question. The Army told us last year the program would cost $200 million. A March, 1986 Army fact sheet to the Committee projects costs of $326.9 million through FY 1991. What is the current life cycle cost estimate? What has caused the $127 million cost growth in less than a year's time? Why is the budget funding profile to Congress incorrect?

Answer. The FY 85 supercomputer program estimate of $200 million was based on a plan to acquire one supercomputer per year beginning in FY 86 and ending in FY 91. Costs included the acquisition of hardware, operating systems software, and some services for software conversion. The estimate did not include urgent requirements for buying an additional supercomputer in FY 86 for the Tank Automotive Command and the lease of a supercomputer to provide an immediate capability to Ballistic Research Laboratory until a purchased supercomputer could be delivered in FY 87. Further, the estimate did not include increased costs for communications, maintenance of the hardware and software, and network support requirements. Since March 1986 the program has been restructured to minimize the dependence on leasing supercomputers, current resources necessary to support the program from FY 86 thru FY 91 is $296 million.

Question. Mr. Springett, your statement says that DOD has an aggressive program to buy ADP equipment which is more economical to purchase than to lease. GAO tells us that the Army is currently planning to lease a second supercomputer for $41.8 million over 8 years that would have cost $39.3 million to buy. Since Congress appropriated funds to buy a Supercomputer, why is the Army leasing another one for the same location?

Answer. The RFP for the supercomputer solicits all methods of financing. However, approval of this RFP clearly stated that any lease option must be shown as cost effective. Since the Ballistic Research Laboratory requirement for Cray 2 type machine cannot be met until June 1987, leasing of an interim machine for approximately 1 year is necessary to support an urgent strategic Army mission. The Army will lease this machine until receipt of the purchased machine. At that time, the lease will be terminated leaving only one supercomputer at BRL.

Question. Why has OSD approved a lease for a second supercomputer that is not cost effective?

Answer. OSD has not approved lease of any supercomputers. The Assistant Secretary of Defense (Comptroller) has directed the Army not to award any supercomputer contracts, whether for lease or purchase, until the program has been reviewed by the MAISRC.

Question. When was the Congress informed that the Army would lease and buy two separate supercomputers at the same location?

Answer. Congress was informed of the intent to purchase a supercomputer for the Ballistics Research Laboratory in the spring of 1985 when the Army initiated a reprogramming action. Budget line 155, ADPE for Non Tactical Management Information Systems of the FY 86 Budget appropriates $23.6 million for one supercomputer. Because of acquisition delays and a nine month lead time to deliver the purchased supercomputer, a second RFP was prepared to lease an immediate capability for Ballistic Research Laboratory to meet urgent requirements of national interest. This short term solution will provide a mission critical capability to the Ballistic Research Laboratory until it is replaced with the purchased Cray 2 type supercomputer. Since this second RFP was an interim solution within the Army approval authority, Congress was not formally notified.

Question. The committee understands only two-thirds of the purchased supercomputer's capacity will be used by the Ballistic Research Laboratory. What is the perceived need to lease a second supercomputer at the same location?

Answer. There will be only one machine at any time at BRL. As indicated before, one leased machine will be replaced with one purchased machine. The perceived workload at Ballistic Research Laboratory is inaccurate. Ballistic Research Laboratory's current supercomputer workload estimate is 13,000 Cray 2 hours which exceeds the annual capacity of a Cray 2 type supercomputer. As I stated earlier the leasing of a supercomputer at the Ballistic Research Laboratory is an interim measure to provide immediate capability to Ballistic Research Laboratory until their purchased machine is delivered in June 1987.

Question. Does this make sense to you, Mr. Springett?

Answer. The MAISRC will review the Army supercomputer program. Specific capacity requirements will be addressed at that time.

Question. Can the Army's supercomputing requirements be satisfied through the clustering of conventional hardware?

Answer. Conventional hardware is not designed to perform the type processing that is done by a supercomputer. The solution to complex physical phenomena, such as armor penetration mechanics and nuclear shock wave analysis, requires massive amounts of memory, unique architecture, numeric precision, and significant processing speed, which can only be satisfied by the unique vector processing capabilities of a supercomputer.

Question. Has the Army made any effort to coordinate supercomputer acquisitions with other DOD organizations to ensure that this hardware is currently being utilized?

Answer. Supercomputer resources within Department of Defense are currently being used by the Army. During initial phases of developing the Army program a review was made of the capabilities of the other agencies. Limited supercomputer support from Department of Energy weapons laboratories and the Naval Research Laboratory is not sufficient to meet our needs. The project manager has continued to monitor the availability of Department of Defense supercomputers and his latest survey in May 1986 failed to identify available time on supercomputers from any Department of Defense organization.

Question. The Army supercomputers obtained with FY 87 funds are scheducled to first operate in February and July 87. Why are FY 87 funds to purchase to third machine thought to be necessary?

Answer. FY 87 funds are necessary to purchase the third supercomputer for the Combined Arms Center at Fort Leavenworth, KS. Program details including the proposed fielding plan and architecture for the total program will be presented to the DOD MAISRC.

Question. Mr. Springett, do you support this rapid acquisition pace?

Answer. The pace of the program will be addressed as part of the planned MAISRC review.

Question. Will the Army have sufficient experience with these computers to intelligently select additional capability? Will the Army have the personnel to make good use of, and adequately support, a third supercomputer?

Answer. Army activities planned for initial receipt of supercomputer capability have extensive experience in scientific and engineering data processing and have obtained expertise on large main frames and timeshared supercomputers. For the most part the users of the supercomputer are professional in the fields of computer science, electrical engineering and communications. They have an extensive background in using the computer capabilities and have been directly involved in the design and development of applications which are to be run on the supercomputers. The establishment of a Supercomputer Technological User's Group to share detailed experiences, balance requirements, and portray operational effectiveness is underway. The Project Manager is also monitoring closely Department of Energy and National Science Foundation efforts to maintain our technological edge. The organizations scheduled for supercomputer installation have experience in this technology and if there is a deficiency, contractor support will be obtained. Finally, the OSD MAISRC will review all aspects of the Army implementation program to ensure each system will be supported by the resources necessary to make effective use of it.

Question. Provide for the record the present requirements analysis that supports Army supercomputer acquisition plans.

Answer. The requirements analysis for the Ballistic Research Laboratory is classified and provided under separate cover. The remaining requirements are being finalized as part of the Systems Decision Paper for the DOD MAISRC and will be provided as they receive final Army and DOD approval. The workload estimates which were used for the establishment of the supercomputer program were derived based on previous Army supercomputer timesharing operations and extrapolations of existing applications.

Question. Describe the supercomputer deployment architecture in detail for the record.

Answer. The proposed deployment architecture is a mixture of three regional supercomputer centers and five dedicated processors. Access to these supercomputers will be via Defense Data Network or special high speed data lines. Since OSD plans to review the deployment architecture during the MAISRC, specific details of the architecture will be provided subsequent to OSD approval.

Question. Does OSD plan to review it?

Answer. Army supercomputer deployment plans will be addressed as part of the planned MAISRC review.

Trident Logistics Data System

Question. The Trident Logistics Data System has a life cycle cost of $477 million. Congress has heavily invested in standard Navy logistics systems whose life cycle costs exceed $2 billion and which will support all Navy ships other than Trident.

Why do you think it is necessary to develop, operate and maintain a dedicated logistics information system in support of the Trident submarine?

Answer. The Trident Logistics Data System (LDS) supports maintenance of the Navy's strategic ballistic missile submarine (SSBN) force. These submarines were designed to be supported by a unique maintenance concept, the engineered operating cycle. To reduce the period which Navy ships normally spend in overhaul and to increase the effective at-sea time, Trident was designed so that essential maintenance could be done in 18-day in-port periods between patrols. This places very rigorous demands on the logistics support system not faced for other Navy weapon systems. To meet the turnaround time for maintenance information and supply support, it was necessary to develop a unique Trident maintenance management system which intergrated data from the following Navy standard systems: Uniform Inventory Control Point (UICP), Uniform Automated Data Processing Systems for Stock Points (UADPS-SP), Stock Point Logistics Integrated Communications Environment (SPLICE), the Maintenance Data System, the Shipyard Management Information System (SYMIS), the Ships Configuration and Logistics Support Control System, and the Shipboard Non-tactical ADP Program II.

The Trident LDS has been designed to support maintenance management, perform configuration status accounting, and provide integrated logistics support information to Logistics Element Managers (LEMs), Participating Managers (PARMs), and operational phase users (e.g., Trident submarines and Trident Refit Facilities) in support of their life-cycle responsibilties.

Question. Are Trident logistic support requirements being considered and incorporated into the redesign of the Navy's ICP system, in which Congress will invest $550 million?

Answer. Since the inception of the Trident Logistics Data System, one of the primary requirements was to utilize existing UICP and UADPS-SP systems to the maximum extent for supply support. The redesigned UICP and UADPS-SP systems will continue to support Trident supply requirements.

Question. When the redesigned UICP system becomes operational, will Navy continue to maintain a dedicated logistics management system for the Trident?

Answer. Navy will continue to maintain a dedicated Trident system.

Question. If so, why?

Answer. When the redesigned UICP system becomes operational the supply support requirements for the Trident System will be supported by the redesigned UICP system. The UICP support system provides the primary or Navy common supply support products such as COSAL, load lists, inventory management, provisioning, etc. for Trident, and will continue to support Navy common supply support requirements of the Trident System. To meet the operational and maintenance requirements of Trident, the integrated LDS must be maintained.

Question. How much would it add to the life cycle cost of the Inventory Control Point system to incorporate data requirements for the Trident?

Answer. The Trident LDS is not a stand-alone system but rather a system that integrates standard systems into a unique maintenance management system. The Trident LDS concept capitalized on existing Navy standard information systems. Since the UICP system is one of the standard systems integrated into the LDS, there are no additional life cycle costs required for UICP to support Trident.

Question. How does this compare to a stand-alone system?

Answer. Since Trident integrates information from a number of individual systems, including UICP, and incorporates functions not part of the UICP mission, a direct comparison of life-cycle costs is not available, nor would the meaning of such comparison be clear.

Question. We understand Navy's concern on Trident to be one of priority. Why is it not feasible to design a Trident priority capability into the Inventory Control Point system?

Answer. Trident logistics support priorities are now supported by the existing UICP systems and will be retained in the redesigned UICP system. These priorities are supported by Trident parameters, which are utilized by the standard UICP system to produce the Trident Supply Support products. Trident maintenance priorities are and will be supported by the Trident unique maintenance management system.

Question. Has Trident Logistics System been subjected to either a MAISRC or CRC review at the OSD level?

Answer. No. The Trident Logistics System has not been subjected to either a MAISRC or CRC review at the OSD level.

Question. Mr. Springett, don't you think a MAISRC review of this system would be a good one?

Answer. No. Trident Logistics Data System development began in Fiscal Year 1973. Development costs through Fiscal Year 1985 are $18 million. Total development costs are estimated at $41 million through Fiscal Year 2008. Life cycle management reviews are conducted by the Naval Data Automation Command (Code 10). The last Systems Decision Paper 3 was approved in late 1985. At that time the development effort was 70 percent complete.

AIR FORCE NATIONAL ACADEMY OF SCIENCES STUDY

Question. The Air Force is nearing completion of the Phase IV ADP program which replaces large computers at almost every Air Force Base in the world. Life cycle costs for the Phase IV equipment are about $5 billion. The Air Force recently received a study from the National Academy of Sciences recomending future actions now that the Phase IV hardware is in place. Mr. Springett, would you please summarize the Academy's findings?

Answer. There were four principal findings in the National Academy of Sciences (NAS) Interim Report on Air Force Base Level Automation Environment.

a. Within the limits of its current resources, strategy and approach, the Air Force is doing a good job of base-level automation, but much more remains to be done.

b. The Air Force has a window of opportunity to rethink and reorganize several of the base-level functions for the 1990–1995 time period, and to specify information systems to support these functions.

c. Air Force wing/base-level units are critically dependent on ADP support to fight effectively, but the necessary actions have not yet been taken to ensure these system capabilities are available for combat deployment and operations.

d. The Air Force can realize significant technological improvements (and probably save money and manpower in the long run), if it changes the way it develops and maintains base-level information systems.

Question. One of the findings in the study is that there exists no specific, documented plan, schedule or funding to address Phase IV fixes and improvements. How will the Air Force address this concern?

Answer. That specific finding was addressed in the Committee's first recommendation: "Prepare a Phase IV post-implementation enhancement plan." The Air Force concurs with that recommendation and has begun work on a plan. The plan will follow the outline recommended by the Committee and will be available for Air Staff review in June 86. As recommended by the Committee, the plan will establish priorities and schedules, and identify resources to "accomplish the fixes and improvements" necessary to optimize Phase IV functionality. It should detail the required actions to make near-term improvements in system performance and put the Air Force in a better position to modernize Phase IV software.

Question. Will the Air Force leadership provide a policy statement to provide direction for future base-level automation efforts?

Answer. The Air Force is currently developing policy and guidance for future base-level automation efforts. That effort will draw on the results of several on-going initiatives including the development of a suite of architectures and all of the functionally oriented Base Information Analysis studies. Guidance for stating requirements, specifying and acquiring systems and implementing an integrated base-level capability is contained in the Air Force 700-series regulations.

Question. What consideration is the Air Force giving to reorganizing its base-level logistics process to take advantage of the new modern computer equipment?

Answer. The future concept of logistics operations and associated logistics requirements at base level is currently under study. The study's aim is to integrate logistics support system functions to the fullest possible extent. The resulting plan of action will propose development and implementation of a suite of logistics support improvement initiatives.

Question. How does the Air Force plan to ensure that deployed forces will have adequate ADP support during wartime?

Answer. Technology and budget constraints limit full implementation of fixed base capability at deployed locations. Where feasible, the Air Force is providing limited automation support with the intent to improve those capabilities over time. Several ongoing programs will provide capabilities to support deployed forces either with transportable hardware/software suites or via extended communications capability to fixed base operations. For example, a deployable supply system will be served by direct connection to fixed base Phase IV facilities. Other systems will use TRI-TAC equipment for switching and transmission into the DCS AUTODIN and its successors. Critical, deployed ADP equipment will be directly connected via satellite and terrestrial media to support locations.

Question. How will the Air Force address the Adacemy's finding of a fragmentation of management responsibility for the base-level automation environment.

Answer. The Air Force realizes significant benefit could accrue from designation of a single manager for base-level systems. A systems program office (SPO) with responsibility for integration of functional and major command systems with standard ADP and communications facilities could provide the centralized management using the aforementioned studies, architectures, and regulations as policy and guidance. However, because command relationships and organizational responsibilities are key factors in the success of this approach, we need to assure that all concerned reach consensus on these factors. We plan to finalize a study of the SPO concept implications and develop a SPO management and funding strategy by late 1986.

ASAT ADP

Question. The budget proposes $1.8 million in FY 1987 and a total of $9.5 million through FY 1991 to upgrade the software support and ADPE maintenance of the ASAT Mission Control Center.

Mr. Springett, given Congressional restrictions on testing ASATs, why have you authorized these funds in the budget?

Answer. Under the restructured ASAT program funding for the Mission Control Center (MCC) will begin in FY 1988.

Question. How likely is it that the Air Force would need an operational ASAT mission control center in FY 1987?

Answer. There is no requirement for an operational ASAT mission control center in FY 1987. The Prototype Missions Operations Center (PMOC) will be required to support ASAT testing in FY 1987.

Question. Why does your budget state that the type of equipment needed has not been determined?

Answer. No contract for mission control center equipment has been awarded at this time. However, the Air Force intends to procure IBM 3083 computers for the mission control center to ensure compatibility and standardization within the Space Defense Operations Center.

Question. What is the life cycle cost for the ASAT mission control center upgrade?

Answer. A life cycle cost estimate for the mission control center is not available now. An independent cost analysis (ICA) of the entire ASAT program to include the mission control center is being conducted at this time. A life cycle cost estimate for the mission control center is being developed as part of this ICA and will be available to support our initial request for mission control center funds in FY 1988.

TECHNICAL DATA

Question. The Defense Department recently submitted a very responsive report to the Committee on its efforts to automate technical data and manuals and to evolve to automated logistics systems in the 1990s. We intend to discuss these initiatives with DOD witnesses at a future hearing. However, some issues in this area should be of concern to you, Mr. Springett, as DOD's senior ADP official.

Mr. Springett, why have you allowed each Service to develop its own system for automation of technical data repositories?

Army—Digital Storage and Retrieval Engineering Data System (DSREDS).

Air Force—Engineering Drawing Automated Storage and Retrieval System (EDCARS).

DLA—Engineering Drawing Automated Storage and Retrieval System (EDASRE).

Navy—Engineering Drawing Management Information and Control System (EDMICS).

Answer. These systems are not totally independent efforts. The Army and Air Force recognized common requirements and jointly developed a technical specification and procurement package that is currently under contract for the DSREDS and EDCARS repository systems.

The technical specification and plans for the DSREDS/EDCARS program was distributed to the Navy and DLA, but the balance of work loads in their repositories was different, and did not fully exercise the technical strength of the optical disk (near real-time random access and display of stored drawings). The Navy and DLA repositories are heavily oriented to the mass production of technical data packages to support competitive reprocurement of spare parts. Interim systems suited to these requirements are being pursued by the Navy and DLA. The DSREDS/EDCARS approach is being evaluated by the Navy and DLA for their planned digital storage enhancement.

The Office of the Secretary of Defense, recognizing the different Service requirements and the rapid change in technology, has not directed the adoption of a single system of hardware or software. The policy instead has been to assure that interface standards are developed that will allow the transparent exchange of information between repositories, regardless of the mechanism of storage. This policy provides flexibility in satisfying user needs at the lowest cost and technical risk and enhances competition. To support rapid access to engineering data, a DoD-wide index/locator system is being developed. This system, called the Military Engineering Data Asset Locator System (MEDALS), will be located at the Defense Logistics Services Center, and will be operational by October 1989.

Question. What efforts have been made to either coordinate the development of these systems, or at least share "lessons learned" data between the Services?

Provide details for the record and name the OSD official who should be responsible for overseeing these systems.

Answer. Since 1982 the Services with OSD participation have maintained a working relationship to assure an interchange of lessons learned, resolution of common problems and informal coordination of specification requirements. The Army and Air Force have formalized this relationship in the joint DSREDS/EDCARS program which is being closely monitored by the Navy and DLA.

In 1985, OSD initiated the Computer Aided Logistics Support (CALS) effort to integrate DoD plans for acquiring, storing and distributing technical information in digitized form. A key element of CALS will be the adoption of common data interchange standards to ensure compatibility of Service systems and a unified DoD interface with Industry.

The senior DoD official responsible for oversight of these systems is the Director, Standardization and Data Management, Mr. Peter Yurcisin, located in the Office of the Deputy Assistant Secretary of Defense (Production Support).

Question. The Committee understands that the Army and Air Force are in fact sharing the same contract. Why are you allowing Navy and DLA to pursue separate initiatives?

Answer. There has been considerable coordination by the DSREDS/EDCARS program with the Navy and DLA regarding the DSREDS/EDCARS efforts. Navy has been provided copies of the RFP and the contract (including the technical specifications), and they have had observers at various contractor demonstrations and meetings. Both the Navy and DLA were briefed about the DSREDS/EDCARS program before the RFP was released, but their needs for on-line access for engineering data are less immediate than those of the Army and Air Force.

The Navy and DLA have continued their close coordination and at the present time are evaluating a joint procurement for enhancing current repository automation. This evolution includes review and possible use of the DSREDS/EDCARS technical specification as the basis for development of a joint procurement requirement for digital storage. The Navy and DLA will assess lessons learned from DSREDS/EDCARS and the subsequent development of new technologies to assure that their requirements are structured in the most cost-effective way.

Question. Provide for the record the funding in fiscal years 1984 to 1991 for the above named systems by appropriation and show their estimated life cycle cost.

Answer. Funding figures provided below reflect the President's budget. The life cycle cost figures reflect differing requirements and differing equipment/technology lifetime estimates. The life cycle costs reflect best estimates of future total costs of equipment and operations of the repositories. They do not reflect the benefits (other than increased efficiency in managing repository functions) that were the reasons for repository automation, such as reduced administrative lead time in procuring spare parts or reduced costs of revising drawings.

(AIR FORCE) ENGINEERING DATA COMPUTER ASSISTED RETRIEVAL SYSTEM (EDCARS)

[In millions of dollars]

Appropriation	Fiscal year			
	1984	1985	1986	1987
3080	6.5	4.8	13.8	2.6
3400	.5	1.1	1.7	1.7
Total	7.0	5.9	15.5	4.3

The life cycle cost for EDCARS to include 10 years of operation past initial operating capability totals $79.7 million.

(DLA) ENGINEERING DRAWING AUTOMATED STORAGE AND RETRIEVAL EQUIPMENT

[In millions of dollars]

Appropriation	Fiscal year			
	1984	1985	1986	1987
Procurement		4.6		
Operation and maintenance		.6	3.0	
Total life cycle cost (development and 10 years operation)	28.0			

Note.—DLA is in the process of revising Life Cycle Cost estimates in support of planned digital storge enhancements to EDASRE. These revised figures will be available in July 1986.

(NAVY) ENGINEERING DRAWING MANAGEMENT INFORMATION AND CONTROL SYSTEM (EDMICS)

The Navy has a consolidated program called Navy Standard Technical Information System (NSTIS) which incorporates Navy requirements for technical/engineering data repositories. Under this consolidation is a project to automate technical/engineering data repositories called EDMICS (Engineering Data Management Information and Control System) programmed to be funded as follows:

[In millions of dollars]

	FY 84	FY 85	FY 86	FY 87
OPN	0		1.8	4.4
OMN	0	1.3	1.3	2.8

Estimated life cycle costs will not be available until the Systems Decision Paper (SDP) is submitted for approval (mid-July 1986).

(ARMY) DIGITAL STORAGE AND RETRIEVAL ENGINEERING DATA SYSTEM (DSREDS)

[In millions]

Appropriation	FY 84	FY 85	FY 86	FY 87
Other Procurement Army	6.8	4.8	24.3	
O&M Army—Implementation	0.2	0.4	0.5	0.9
O&M Army—Operations				
Total Life Cycle Cost (Development and 9 years operation)	129.9			

Question. The Committee understands we have the same problem with ADP systems for technical manuals and orders. Name all DoD ADP systems being developed to automate technical manuals and orders, provide the funding in fiscal years 1984 to 1991 by appropriations, and show their estimated life cycle cost. Also name the OSD official responsible for oversight of these systems and why proliferation of separate and redundant systems has been allowed.

Answer. The near term technical manual automation projects include the Army Integrated Publishing and Printing Service (AIPPS/600S), and the Air Force Automated Technical Order System (ATOS). These systems embody different acquisition approaches designed to meet the highest priority needs of each Service. The Navy had no near term technical manual automation program.

The Army approach (AIPPS) is to use contractor supplied hardware/software installed at Army sites for automated preparation and printing of technical manuals and other documents. The AIPPS contract does not buy or lease equipment, but rather procures a service. It is therefore not considered an "ADP system" in the context of DoD acquisition procedures.

FUNDING

[In millions of dollars]

	FY 84	FY 85	FY 86	FY 87
AIPPS/600S O&M			1.6	15.4

The life cycle cost of AIPPS/600S is simply the cost of the contractor services as shown above.

The Air Force (ATOS) prepares, updates, and distributes technical manuals at the depot level. ATOS is being acquired in accordance with ADP acquisition procedures.

AFLC is developing one system to automate technical manuals and orders. That system is the Automated Technical Order System (ATOS). ATOS is being implemented in phases. Phase I is the depot publication system which automates the creation of technical order (T.O.) change pages in camera ready copy. Phase I systems are currently being implemented throughout AFLC at the Air Logistics Centers (ALCs) and the Aerospace Guidance and Metrology Center (AGMC). Life cycle costs are $39,520,000. FY88–91 funds are planning estimates and have not been approved by OSD. Funding by appropriation for Phase I for FY 1984–1987 is:

Phase I	FY 84	FY 85	FY 86	FY 87
3400	2.4	2.3	2.7	3.6
3080	0	4	9.2	0

Phase II provides for distribution of complete TOs, including basic TO text, changes, supplements and time compliance items, in digital format among the ALCs and AGMC, and within them to the shops in the Technology Repair Centers. The ATOS Phase II acquisition will also include ATOS B–1B Pilot system for implementation at four SAC B–1B main operating bases and Headquarters SAC, 8th and 15th Air Forces. The ATOS Phase II systems will serve as the centralized master TO database for all TOs for which the particular ALC or AGMC has prime maintenance and distribution responsibility. Life cycle costs are $84,175,000. Funding by appropriation for Phase II for FY 1984–1987 is:

Phase II	FY 84	FY 85	FY 86	FY 87
3400	0	1.2	2.4	.2
3080	0	0	10.1	7.1
3600	0	0	1.5	8.2

The Navy has not programmed any funds for the development of an ADP system to automate technical manuals.

In addition to these near term efforts, each Service has projects planned or underway to demonstrate the technologies required for future capability. The future capability will involve automated authoring systems that are integrated with contractor design and logistic data bases, electronic delivery and distribution systems, new formats for electronic display, and a mix of print on demand capabilities and paperless presentation of information to end users in the field. These development efforts are now being coordinated under the DoD Computer Aided Logistic Support (CALS) initiative as described in the 28 March report to the Committee. Projects include:

Automated Publications Production System (Army); Computer Aided Technical Information System (Navy); Computer Based Aid for Troubleshooting (Navy); Computer Based Maintenance Aids Systems (Air Force); Electronic Maintenance Publications System (Army); Integrated Maintenance Information System (Air Force); Job Performance Aids Production System (Army); Militarized/Miniaturized Electronic Information Delivery System (Army); Navy Automated Printing System (Navy); Navy Print on Demand System (Navy); Navy Technical Information Presentation System (Navy); and Personal Electronic Aid for Maintenance (Army).

The total funding for these programs is:

[In millions of dollars]

	FY 84	FY 85	FY 86	FY 87
RDT&E		0.7	9.0	18.3
PROC		0.0	.6	0.0
O&M		1.6	2.4	2.6

It should be noted that none of the Services has a program to cover the complete spectrum of technical manual automation from initial preparation through presentation to the end user. Each Service has several pieces of the problem covered, in some cases with differing technical approaches. This is to be expected in such a relatively new area with rapidly evolving technology. These developing systems will be closely monitored, and the best technical approaches will be selected for long term DoD use. The key question at this juncture may be one of compatibility among systems rather than commonality. The CALS program will ensure that common data interchange standards are adopted for all of the technical manual automation programs to ensure compatibility.

The senior DoD official responsible for oversight of automated technical manual systems is the Director, Standardization and Data Management, Mr. Pete Yurcisin, located in the Office of the Deputy Assistant Secretary of Defense (Production Support). He is a member of the CALS Steering Group, and oversees the execution of CALS coordination efforts regarding technical manual systems.

The principal issues in managing automated technical manual systems at these early stages are not duplication and proliferation. The differences in Service approaches stem from different starting dates in a rapidly changing technical environment, different Service practices relative to contractor support, and different priorities in functions to be automated. The DoD approach at present is now to standardize the systems, but rather to standardize the system interfaces. DoD interface standards for technical manual systems are now being reviewed by industry associations and are expected to be in initial use by 1987. This standardization approach has the inherent advantage of allowing such Service to tailor its automation to meet specific user needs, of maintaining competition, and of allowing rapid incorporation of technological advances. The cost to DoD of initially having three separate systems is low. An evaluation in the 1987-1988 timeframe will provide experience data on the advantages and disadvantages of various technical manual automation approaches.

Question. What has caused the schedule delay in DSREDS and EDCARS?

Answer. The six-month schedule delay for DSREDS/EDCARS has been caused by a number of factors including a late start by the prime contractor (AT&T Technologies/Information Systems) in the areas of staffing and ordering of long lead-time components. In addition, there have been minor technical problems with five percent of the hardware, ten percent of the applications software and in testing and system integration. AT&T has corrected these deficiencies and is back on track.

Question. Provide for the record by fiscal year and appropriation the amounts requested of Congress, appropriated, committed, and obligated in each fiscal year 1984 to 1986. Show forecast commitment and obligation dates for uncommitted/unobligated balances.

Air Force answer. The following table shows the EDCARS funds requested, appropriated, committed and obligated by Fiscal Year:

[In millions of dollars]

	FY 84	FY 85	FY 86
Requested:			
3400	0.5	1.1	1.7
3080	6.5	4.8	13.8
Appropriated			
3400	.5	1.1	1.7
3080	6.5	4.8	13.8
Committed:			
3040	.5	1.1	1.7
3080	6.5	4.8	[1] 12.3
Obligated:			
3400	.5	1.1	1.7
3080	6.5	4.8	[1] 12.3

[1] The remaining FY86 funds (1.5) will be committed and obligated in July 1986.

Army answer. See table below:

FUNDS COMMITTED/OBLIGATED—FY 84–FY86

[In millions of present year dollars—no inflation/deflation factors]

	Auth	Comm	Oblig	Balance	Forecast		
					Amt	Comm	Oblig
OPA—2035:							
FY84	6.899		6.893	0.006	0.006	6/86	6/86
FY85	4.554	4.186	.010	.358	4.176		5/86
					.358	6/87	6/87
FY86	23.021			23.021	5.197	12/86	12/86
					4.548	1/87	1/87
					1.669	2/87	2/87
					4.690	3/87	3/87
					3.930	7/87	7/87
					2.987	6/88	6/88
OMA—2020:							
FY84	.220		.220				
FY85	.354		.354				
FY86 (thru 2d Qtr)	.212		.212				

Question. We understand that the Army believes the contractor for the joint system is experiencing difficulty, yet the Air Force is pressing for quick obligation of funds. The contractor has not been able to successfully demonstrate that the system works. Mr. Springett, will you assure the Committee that the DSREDS/EDCARS program is under control, and that no funds will be obligated prematurely simply in order to consume budgeted funding?

Answer. The Army and the Air Force know that the contractor is experiencing some difficulty with the DSREDS/EDCARS system. However, the technical problems are not insurmountable. On 28 February 1986, AT&T formally demonstrated the functionality of every subsystem and each hardward component of the system. The contractor has demonstrated that the system works. On 3 April 1986, the Air Force exercised options for the last four EDCARS systems on the basis that (1) the system was formally demonstrated as a working system on 28 February 1986, and (2) that AT&T was in fact solving management and technical problems. Consequently, the Air Force made a calculated management decision to go ahead and exericse options, fully expecting to receive fully functional EDCARS systems with minimal risk. The DSREDS/EDCARS program is under control by the two Program Management Offices (one for the Air Force and one for the Army). These offices provide coordinated management and visibility of these programs. This management arrangement has resulted in system enhancements worth $6 million provided by AT&T as compensation for the six-month schedule slippage. No funds have been, or will be, obligated merely to consume budgeted funding.

Question. What activities originally scheduled for FY 1987 will now not occur during FY 1987, and what funding by Service and appropriation is budgeted for them?

Air Force answer. All activities originally scheduled for FY 87 will occur in FY 87. The program schedule changes during FY 87 are shown in the chart below. The funds for Air Force systems to be operational in FY 87 were provided in FY 85 and FY 86. The funding detail was provided in the previous answer to the question on EDCARS request, appropriation, commitment and obligation.

THE EDCARS PROGRAM SCHEDULE

EDCARS System Operationally Ready Dates	Original Schedule	Present Schedule
SM-ALC	Jan 86	May 86
OC-ALC	Sep 86	Dec 86
OO-ALC	Aug 87	May 87
SA-ALC	Sep 87	Jun 87
WR-ALC	Dec 87	Sep 87

Army answer. Delayed activities are shown below. Impact of the delay is limited to extension of the time that the DSREDS program office will be operational and a delay in receipt of the benefits from DSREDS at the affected sites.

Event	Original Schedule	Revised Schedule
Delivery of the 2d Army System (CECOM)	August 1986	January 1987.
Exercise of AMCCOM, Dover, Option for 3d Army System	July 1986	December 1986.

Question. Do you plan to accelerate FY 1987 activities to get the projects back on schedule?

Answer. The Army does not plan to accelerate FY 87 activities to get the program back on schedule. The Army schedule will be corrected with delivery of their fifth system, thus returning to the original schedule by March 1987. The Air Force, by exercising its remaining options on 3 April 1986, will receive its third through fifth systems earlier than originally scheduled. In addition, AT&T

is preparing a proposal to deliver the last Air Force systems six months earlier than the current contract.

Question. If so, what is your plan to manage the acceleration while enduring adequate testing, quality, and oversight?

Answer. The acceleration of the previously described activities will not necessitate any change to the EDCARS management approach or disciplines employed to ensure adequate testing, quality and oversight. The same level of testing will be conducted throughout the accelerated plan as would have been applied to the original plan.

ADA LANGUAGE

Question. Ada is a high-order computer programming language developed by DoD in an attempt to reduce the high cost of software for military applications. A number of studies have indicated that, if fully implemented as the standard DoD programming language DoD-wide, savings of as much as $24 billion over a 16 year period could be achieved.

Mr. Springett, since the Comptroller is DoD's senior official for ADP resources, are you responsible for the Ada initiative?

Answer. No. That responsibility is not under the Comptroller.

Question. Who is?

Answer. The Ada initiative is the responsibility of the Director of Computer Software and Systems within the Office of the Deputy Under Secretary of Defense for Research and Engineering (Research and Advanced Technology).

The Ada Joint Program Office (AJPO) was established in December 1980 for the specific purpose of providing management of the total Department of Defense effort to introduce, implement and provide life cycle support for the Ada programming language. The AJPO has two major task areas associated with the Ada program: (1) standardization (which includes Ada language control as well as the Ada compiler validation process); and (2) use (which includes Ada programming support environments, Ada education and training, Ada promotion, Ada technology insertion and Ada international activities).

Question. The Comptroller must find potential savings of $24 billion quite attractive. Do you have an opportunity to influence the acceptance of Ada within the Department?

Answer. Yes, the recent decision by Mr. Taft to consolidate the policy and program oversight responsibility for mission critical computer systems with the existing information resource management responsibilities of the Assistant Secretary of Defense (Comptroller), does create a greater opportunity for this office to play a role in software policy related to the Ada program.

Question. Why is the DoD Directive regarding the use of Ada still in draft status after three years?

Answer. The directive regarding use of Ada was originally published by OUSDR&E in the form of a draft revision to DoD Directive 5000.31, Computer Programming Language Policy. Later a decision was made by OUSDR&E to incorporate the policy into a revision of DoD Directive 5000.29, Management of Computer Resources in Major Defense Systems. This Directive was delayed due to difficulty in obtaining department-wide consensus. Now that policy responsibility for Mission Critical Computer Systems has been transferred to the ASD(C), DoDD 5000.31 will be updated by OASD(C).

Question. What obligation do the Services have to comply with a DoD directive in draft status?

Answer. Since the policy was published as a letter endorsing a draft directive, it was in force for 90 days. The Under Secretary of Defense for Research and Engineering reiterated his support for the policy that Ada is the single, common computer language for defense mission critical applications in December 1985.

Question. What effect does the three year old DoD draft Directive on Ada have on the commitment of industry to pursue the development of Ada?

Answer. Despite the draft status of the Directive, industry is convinced of DoD's commitment to move towards Ada. There are currently over 100 DoD programs which are using Ada (or which are planning to use Ada) and that number continues to grow. Such programs include the Advanced Tactical Fighter, the World Wide Military Command and Control System (WWMCCS) Information System (WIS) and the Advanced Field Artillery Tactical Data System. In addition to DoD specific programs, Ada has been selected for use by the U.S. Postal Service, by NASA for use on the Space Station program, and by NATO for the whole or partially 14 nation funded portion of the NATO Command, Control and Information System.

The Ada programming language is not a military standard, it is however an American National Standards Institute standard and a Federal Information Processing standard. In addition, Ada is expected to be accepted as a standard by the International Standards Organization in the latter portion of 1986.

Successful demonstrations of the use of Ada, with the resultant productivity improvements, have fostered the growth of commerical programs based upon the use of Ada. Approximately 40 companies are developing Ada compilers and most major contracting firms have developed a nucleus of Ada expertise. Ada has been successfully used in such diverse applications as payroll accounting, banking, heart-monitoring equipment, and artificial intelligence. The Ada programming language is also now being considered for use in development of the future 7J7 aircraft by Boeing Commerical Aircraft Company.

Question. What efforts are being made by DoD to train programmers, other technical and management personnel in the use of Ada?

Answer. The Service academies all teach Ada at various levels (from a full course on software engineering with Ada to an introductory programming course on Ada). Ada is also taught at the graduate level at the Naval Post Graduate School and the Air Force Institute of Technology. Four Ada courses are taught at the Keesler Technical Training Center at Keesler Air Force Base. These courses include (1) a one day manger's orientation to Ada; (2) a three day orientation to Ada software engineering for managers with computer background; (3) a ten day course on the fundamentals of Ada programming and software engineering for experienced programmers; and (4) a four week Ada applications programming course for coders.

The Army Management Engineering Training Activity at Rock Island, Illinois, provides training in Ada and software engineering at its location and throughout CONUS. An intern program in software engineering and Ada is scheduled to begin at Red River Army Depot for new interns entering the Government service in July 1986. The U.S. Army Material Systems Analysis Agency offers an introduction to Ada for engineers and scientists at Aberdeen Proving Ground, Maryland. Also offered is a video tape series, entitled "Ada Programming Language", which is distributed through the National Audio Visual Center, the Ada Joint Program Office and the U.S. Army.

The Ada Software Engineering Education and Training (ASEET) team, a tri-Service team under the sponsorship of the Joint Program Office, was established to provide a detailed and organized approach to identify Ada education and training needs of DoD and the methodology and materials to fulfill those needs. The ASEET team is sponsoring an education and training workshop in June 1986 to provide a forum for vendors and educators to meet and share information with regard to Ada training materials, Ada support software and computer aided instruction.

Finally, the Ada Joint Program Office publishes the Catalog of Resources for Education in Ada Software Engineering (CREASE). The document provides current information on the availability of Ada textbooks, Ada video tapes, Ada courses and Ada sources of educational information.

Question. Mr. Springett, do you personally become involved in assuring that the Ada program office is funded to the maximum extent that would allow quick transition to the Ada language?

Answer. No, the Ada Program Office is a field activity belonging to the Deputy Under Secretary of Research and Engineering for Research and Advanced Technology. I believe that is the proper placement to allow R&E to exert maximum pressure on the use of Ada in embedded computer systems for which R&E retains policy and program management oversight.

Question. Does the Ada Joint Program Office have sufficient resources to evaluate the efficiency of validated Ada compilers?

Answer. The Ada Joint Program Office (AJPO) has utilized its resources to address the most critical aspect of Ada compilers: a validation capability and the process by which that validation capability can be implemented. In order to ensure that Ada compilers are in conformance with the Ada standard, the AJPO initiated the development of a comprehensive Ada Compiler Validation Capability, which consists of more than 2,500 tests that must be successfully passed by a compiler implementation before receiving a validation status. The validation process is implemented by Ada Validation Facilities which are currently located at Wright-Patterson Air Force Base, Ohio; the General Services Administration in Washington, DC; France; Germany; and the United Kingdom.

Although the Ada validation process is successfully being used as the mechanism by which to determine conformance of Ada compilers to the standard, the process does not address the specific issues associated with compiler performance. Characteristics of a compiler, such as its speed and efficiency, are crucial considerations, particularly for embedded system applications. For this reason, the AJPO initiated the development of a prototype set of Ada compiler benchmarks for use by the public in assessing the performance characteristics of Ada compilers. Plans are currently underway by the AJPO to develop a full-scale Ada Compiler Evaluation Capability which will address all of the performance aspects, rather than conformance aspects, of Ada compilers.

At the present time, Ada Evaluation Facilities (analogous to the Ada Validation Facilities) do not exist, primarily because the need for such facilities was not paramount until sufficient validated Ada compilers became available. Now that there exists a larger number of validated Ada compilers from which program managers may make a selection, the abilitiy to provide such facilities is essential in order to assist program managers in the judicial selection of the most appropriate Ada compilers. Additional resources are required to develop such facilities, but the mechanisms are essentially in place. The FY 88 Budget request will include funds for this capability.

ADP EQUIPMENT MANAGEMENT FUND

Question. Last year, the Appropriations Conference Committee created a $100 million ADP equipment management fund. The fund allows DOD to purchase ADP equipment that it otherwise would have leased due to lack of procurement funding, or to lease ADP equipment instead of buying it if it made economical sense to do so.

Mr. Springett, have you published instructions to the Services on the use of the ADP Equipment Management Fund?

Answer. No. The Department is waiting the outcome of a joint conference action on the "Appropriated, Not—Authorized" appeal made by the Secretary which covers among other things, the $100 million ADPE Management Fund. The "transfer authority" is directly tied to the fund and this aspect is also awaiting the same outcome.

Question. How much of the fund do you think will be consumed by September 30, 1986?

Answer. None of it because of the lead time required to (1) identify appropriate ADPE items, and (2) execute contracts or obligate/transfer funds.

Question. Why has the Department interpreted the Conference Committee action to mean that the funds expire on September 30, 1986?

Answer. The Department of the Treasury established the ADPE Management Fund as FY 1986 single year money because the $100 million was not established in the Department of Defense FY 1986 Appropriations Act as anything otherwise. This was also the opinion of our General Counsel, consequently, it was considered to expire at the end of FY 1986.

Question. Would it be wise to extend the life of these funds?

Answer. The fund would be very helpful as multi-year money with the transfer authority. The concept of using the "transfer authority" to provide the right type of money at contract execution time is appealing. Having the right kind of funding in order to make the most economical purchase is difficult to predict when budgeting/executing years apart. The $100 million corpus (or revolving fund) aids the "transfer authority" by allowing for the purchase when there is not a one-for-one transfer of non-purchase funds into or out of the ADPE Management Fund.

ADP PROGRAM MANAGERS

Question. Program managers for large ADP acquisitions are initially trained as military commanders, and often lack the technical training critical to successfully managing ADP programs.

Mr. Springett, is there a formalized career path for the military officers in the ADP field?

Air Force answer. The Air Force no longer has an ADP career field, per se. In April 1985 the Communications-Electronics and Computer Systems career field was merged into the Information Systems (IS) career field. There are formalized career paths within the IS career field. However, there is no guarantee that program managers for large ADP acquisitions will come from the IS career field. Senior officers in the ADP program manager positions may come from the functional discipline being automated. In such cases their ADP backgrounds and qualifications will vary.

Navy answer. The Navy and the Marine Corps have formalized career paths for their military officers in the ADP field. In the Marine Corps the Data Systems Occupational Field (OF 40) contains three Military Occupational Specialities (MOS): (1) Data Systems Officers (MOS 4002) which is for unrestricted officers from the ranks of Lieutenant through Colonel, (2) Data Systems Operations Officer (MOS 4006) which is for restricted officers from the rank of Warrant Officer through Lieutenant Colonel, and (3) Data Systems Software Officer (MOS 4010) which is for restricted officers from the rank of Warrant Officer through Lieutenant Colonel. The unrestricted officer is eligible for Professional Military Education training as is any officer in an unrestricted MOS in the Marine Corps.

Army answer. The Army has a formalized officer career field for ADP. Officers may select a functional area, in addition to that of their basic branch, at about their seventh year of service (grade of captain); many select Functional Area (FA) 53, Systems Automation Officer. Positions of increasing responsibility exist for these officers through the grade of colonel. Furthermore, a FA 53 officer is eligible to participate in the Army's Materiel Acquisition Management (MAM) Program, identified by skill identifier "6T," the primary source of Army program managers.

Question. What is the upward mobility path for a military officer in the ADP field?

Answer. With the increasing complexity, visibility, and importance of ADP technology to DoD Components, this field is now providing an excellent career opportunity for our military personnel. As evidence of its importance, all the Military Departments now have Flag Rank officers who are responsible for the management of their Department's total information systems program.

Question. Provide details for the record for each service.

Air Force answer. There are a variety of paths Air Force officers in the Information Systems career field can take to reach the top position and rank. These paths generally parallel those for other support officers. The path for IS Programming and Analaysis officers is to work in the ADP systems environment for the first two or three assignments in increasing levels of responsibility. For example, these officers may go from being a programmer to an analyst to a team chief to a branch chief. Then officers can broaden their experience by moving from strictly ADP development assignments to field units as detachment or squadron commanders. From there, they can move back to the ADP systems environment as intermediate or senior leaders.

Navy answer. The upward mobility path for Data Systems Officers is basically the same as other officers within the Marine Corps. The upward mobility path for Naval officers in the automated data processing field is based upon the officer's designator and subspecialty code:

A designator is a numerical code which defines that general designated function/specialty for which officers have trained, and characterizes the nature of assignments officers will have throughout their career. Examples of general designated functions/specialties for which officers may train and serve are: General Unrestricted Line Officer; Surface Warfare Officer, ship; Submarine Officer, nuclear power trained; Pilot, aircraft; Supply Officer; Civil Engineering Officer.

The Department of the Navy categorizes its ADP officers with numerical codes called subspecialty codes. These codes indicate the officer's specific area of knowledge within the ADP discipline, the officer's level of ADP education, the degree of on-the-job ADP experience the officer has, and any specific area of Naval operations to which the officer's ADP capabilities are particularly applicable. Generally, this designator/specialty "drives" the specific application of the officer's ADP knowledge.

Within this framework, an ADP officer follows a career path which allows for growth in specialty and ADP subspecialty areas. In officer's early careers, they are trained for a particular specialty, e.g. Surface Warfare Officer. After an initial training and qualification period, officers will train within the ADP subspecialty area. During the officers' mid-career years, they will perform mid-level management jobs within specialty and subspecialty areas. During the officers' senior years, they will perform program management and command/directorship jobs in specialty and subspecialty areas. Often these mid and senior level jobs will entail simultaneous work in the officers' specialty and subspecialty fields; sometimes these jobs will entail work in only one of the two fields. The long-term objective is to assign ADP officers to jobs in which they will continue to develop as specialists and ADP subspecialists. Subspecialty development is generally subordinate to specialty development.

Army answer. Upward mobility for military officers in the ADP field exists through both their basic branch and the ADP field. Selection for assignment, schooling, and promotion is based on their overall performance in assignments both in their branch and functional area.

Question. What is the ADP program management training provided to a military officer prior to becoming program manager for a major automated information system?

OSD answer. A number of courses in acquisition management are available at the DoD Computer Institute and Defense Systems Management College. All of our major professional military educational schools offer courses designed to insure the computer literacy of our personnel. There is no DoD standard educational requirement which must be completed prior to an officer becoming an ADP program manager. The development of such an educational course in an important priority within our ADP acquisition improvements program.

Navy answer. A Naval officer must complete Masters level postgraduate education in a computer technology curriculum, and have performed satisfactorily two ADP job assignments—each at least two years in duration, prior to becoming a program manager for a major automated information system.

Air Force answer. Air Force Regulation 700-4, Volume I will specify that program managers should have completed a resident program manager course at an accredited academic, professional or military institution. This training will be mandatory for program managers of a program designated as a major automated information system.

Army answer. Officers responsible for major systems acquisition management at the grade of colonel are called "Project Managers". Officers normally hold FA 53 in order to be considered for ADP systems programs. In addition, they must hold the skill identifier "6T", which indicates that they have training and experience in MAM. Once they enter the MAM program, officers attend a 9-week training program at the Army Logistics Management Center at Fort Lee, Virginia. Subsequently, at the grade of senior major or lieutenant colonel, officers attend the 19-week Program Management Course at the Defense Systems Managment college at Fort Belvoir, Virginia.

Question. What efforts are made by each of the military services to maintain continuity in ADP program development?

OSD answer. It is clearly in the Military Department's best interest to maintain continuity in these important areas. However, continuity in this area is difficult due to the constant transfer and reassignment of our military personnel. This same problem has also been experienced with the program staffs of our major weapon systems acquisitions.

Navy answer. The Department of the Navy maintains program development continuity by filling senior management positions with ADP officers who have worked in that or a similar program as mid and senior level managers during previous job assignments.

Air Force answer. Air Force Regulation 700-4, Volume I will emphasize that stability of assignment is critical and specify that the tour of duty for Air Force personnel designated as information systems program managers should be: (a) not less than four years, or (b) until completion of a major program milestone.

Army answer. Army Projects Managers serve a minimum of 3 years in the position. For congressionally designated major programs, Selected Acquisitions Review (SAR) programs, a minimum of 4 years is required.

Question. How long would a military officer be assigned to manage a given ADP system?

OSD answer. While the period of time that an individual is committed to a program must be flexible to deal with program schedules of different durations, under optimum circumstances an individual should be assigned for a period of three years.

Navy answer. Naval officers are assigned to ADP system management positions for a period of 2 to 3 years. The normal tour lenght for Marine Corps officers is 3 years.

Air Force answer. Air Force Regulation 700-4, Volume I, will specify that tours of duty for Air Force information systems program managers should be not less than 4 years or until completion of a major milestone.

Army answer. The normal tour of an Army Project Manager assigned to a given ADP system is 4 years for major (SAR) programs and 3 years for non-major programs, with many serving in such assignments for longer periods.

Question. Would the officer be reassigned to another position in the ADP field, or be transferred to another field entirely?

Air Force answer. An Air Force officer would normally remain in the Information Systems career field.

Navy answer. Naval officers are usually reassigned to another position in the ADP field, although such reassignment may not be immediate. An officer's career pattern focuses on development in specialty and subspecialty. Therefore, the officer's follow-on assignment will depend upon the needs of the Navy, vis-a-vis the officer's specialty and subspecialty qualifications. This combination of forces usually results in reassignment to an ADP management job either immediately or within three years of completion of the last ADP job.

Due to the availability of the Data Systems Officers in the Marine Corps, they are normally reassigned to an ADP billet.

Army answer. An Army officer in the grade of colonel would probably be assigned to another ADP position because of the shortage of that grades in FA 53, and because many officers at that grade are focused on their functional area rather than branch. Every assignment is handled on a case-by-case basis; the needs of the service dictate final assignment.

Question. What is the availability of formalized training through the Department of Defense Computer Institute or other service schools for ADP program managers?

Answer. A number of sound courses in acquisition management are available at the Defense Systems Management College. The DoD Computer Institute offers several courses covering ADP acquisition management. Additionally, all of our major professional military educational schools offer courses designed to insure the computer literacy of our personnel. For example, the Naval Postgraduate School in Monterey, California, offers two accredited Master of Science Computer Technology Curricula: (1) Computer Science and (2) Computer Systems Management. The Air Force Institute of Technology and the Air Training Command also offer courses on various aspects of ADP program management.

The development of an educational course for ADP program managers is an important priority within the Defense Comptroller's ADP acquisition improvements program.

Army answer. All Army Project Managers attend the Program Management Course conducted at the Defense Systems Management College, Fort Belvoir, Virginia.

Question. Is such training mandatory before an officer becomes an ADP program manager?

OSD answer. There is not a standard DoD educational requirement which must be completed prior to an officer becoming an ADP program manager.

Navy answer. A Naval officer must successfully complete Naval Postgraduate School training or an equivalent Master of Science program at a civilian university before becoming an ADP program manager. The officer also must have performed satisfactorily in two previous ADP jobs prior to becoming a program manager for a major automated information system.

Air Force answer. Completion of a resident program management course at an accredited academic, professional or military institution will be mandatory for systems meeting the Major Automated Information System thresholds.

Question. What policies or regulations does the DOD use to properly document system development efforts in order to provide management continuity and educate new personnel regarding an existing system?

Answer. The Department has policies and regulations to document properly its system developments.

Documentation guidance contained in DoD Instruction 7935.1, "DoD Automated Data Systems Documentation Standards," is used for our general purpose automated information systems.

For those computer systems that are integral to a larger weapons systems, MIL STD 2167 is used to ensure that the computer documentation is structured in the same way as the rest of the weapon system documentation.

Question. Are policies and regulations binding on each service?

Answer. Yes, these policies are binding on each Service.

COMPUTER SECURITY

Question. A 1986 Office of Technology Assessment report states that the Federal Government faces new levels of risks to computer security because of its: increased use of networks, employee computer literacy, use of personal computers and decentralized processing, and dependency on information technology.

Mr. Springett, what efforts are underway or planned to improve computer security throughout DoD?

NSA answer. The security of a computer system is greatly enhanced when its managers, operators, and users are aware of the need for security and are conscientious and skilled in employing procedures and techniques that help to maintain it. The National Security Agency's National Computer Security Center has undertaken a number of initiatives to make DoD personnel more aware of the risks posed by insecure systems and to provide them with the training needed to reduce these risks. These initiatives include:

Conducting formal courses on computer security;

Conducting computer security "roadshows", half-day to three-day sessions, tailored to the specific needs of an organization;

Producing and distributing computer security video tapes, pamphlets, and posters that can be used in local education and awareness programs; and

Developing a training program for Computer System Security Officers. The initial iteration of the course will be presented in May 1986 at the Pentagon.

Also, the Center has published the Trusted Computer System Evaluation Criteria to standardize computer security issues within the DoD and the computer industry. These criteria have been adopted as the DoD standard for computer security.

In addition, the Center has published or will soon publish computer security guidelines as follows:

Password Management; Magnetic Remanence; Environment Guidelines; Vulnerability Report Program; Audit Guidelines; Discretionary Access Control; Security in Office Automation; Mandatory Access Control; Personal Computer Considerations; and Trusted Computer Networks

The Center's R&D efforts over the past few years have been dedicated to consolidating a technical data base, producing professional expertise, stabilizing evaluation and verification tools, and developing solutions to subcomponents for major DoD information systems.

The planned goal of the Center is to provide a quantum increase in the security that can be provided to this Nation's automated information systems. To achieve this goal, the Center will be involved in developing components, software and hardware, and using existing technology that will allow the massive retrofit to security features into existing and deploying systems. The Center will also seek to develop and foster widespread availability of secure systems through the verified design level by 1990. Additionally, the Center will be developing the techniques and technology required to assure that effective computer security measures are embedded in the next generation of computers.

Navy answer. The Department of the Navy's computer security instruction is being updated to include the following areas:

New guidance on computer security from Office of Management and Budget Circular A-130, updated life-cycle management guidance for both mission critical and mission support system development, new guidance on internal audit controls, guidance on physical control of computer equipment to prevent bugging, and guidance to cover telecommunication networks, local area networks, and personal computers.

A Navy-wide training program in computer security is being developed to raise awareness and expertise levels of personnel throughout the Navy.

Air Force answer. AFR 205-16, our computer security regulation, is under extensive revision. It will be a comprehensive look at computer security—hardware and software, in addition to the traditional security disciplines (physical, COMSEC, TEMPEST, etc.) Individuals will be shown how to apply each of these concepts to fit their organization's needs. Specific guidance to applying computer security throughout the life cycle will be included in the proposed

AFR 205-16. Every system which processes classified or sensitive unclassified information or performs critical processing will be evaluated to ensure the information is protected at the appropriate level. Corrective actions will be initiated for any identified deficiencies. A interim policy letter has already made the use of the DOD Trusted Computer System Evaluation Criteria mandatory.

We have also taken steps to increase manning to support the Air Force computer security program. Efforts are underway to create an integrated office to address COMSEC, TEMPEST, and computer security. We are actively addressing computer security awareness and training. Formal courses have been established and we make presentations at computer related courses to ensure attendees understand the importance of computer security. Furthermore, we have an annual computer security workshop to share computer security problems, issues, ideas, etc., with command computer security representatives.

Army answer. In 1977 the Army began a formal computer security program with the publication of AR 380-380, Automated Systems Security. In 1985 it was republished under the title "Automation Security." This regulation governs the Army Automation Security Program (AASP) and the Army Automated Data Processing Systems Security Enhancement Program (ADPSSEP). These programs are targeted not only on the security of current automated systems, but also on the security of future systems as they are conceived and designed. Computer security efforts underway or planned in the Army are in concert with Air Force and Navy efforts, the National Computer Security Center (NCSC) and other Federal Agencies in the National Computer Security Program Research and Development (NCSP R&D).

a. The Army is investigating and developing techniques and methodologies for providing multilevel secure capabilities for backend DBMS machines.

b. The Army has initiated the Army Secure Operation System (ASOS) effort. The objective is to develop a family of multilevel secure operating systems applicable for a wide range of tactical requirements. ASOS will be coded in Ada, will support Ada applications, and will be capable of being ported to various hardware architectures which are capable of supporting multilevel secure systems.

Phase I (82-84)—Conceptual design of an A1 secure operating system.

Phase II (84-86)—Refinement of design and development of an operational subset of the operating system.

Phase III (86-90)—Implementation of the secure operating system leading to A1 certification.

Product (89-91)—A multilevel secure operating system that runs on 6802 computer that meets all requirements for A1 certification. So far, Army has funded two of the three phases to develop the A1 certified operating system for tactical computers. The ASOS will form the basis for secure applications such as secure DBMS and secure networks.

c. The dynamic nature of the tactical environment imposes certain requirements on the security (and classification) of information normally not found in more static situations. The capability for reclassification, sanitization, and downgrading of classified information based on battlefield conditions is an integral part of providing timely information to battlefield resources. Army plans to delineate several multilevel secure applications and analyze their multilevel security requirements. The work done will have direct applicability to the battlefield. Real user input to the development of the requirements will be used.

d. The Army will initiate a program to develop a "workbook" on the methods and procedure required to accredit a multilevel secure system. Emphasis will be on the relationship of the DOD Trusted Computer System Evaluation Criteria (the "Orange Book") to the accreditation process. The manual also will emphasize reaccreditation procedures for a secure system when modified.

e. Stressful combat environments within which tactical systems must operate necessitate high levels of survivability. Dispersion of physical resources which then are linked into networks raises multiple network security issues. Army plans to delineate, investigate, and resolve these issues in networks and distributed system security issues.

Demands on the computer security program currently outstrip capabilities. The private sector likely will not develop the upper levels of security technology because it perceives no market for an Al multilevel secure system except for the U.S. Government. We will have to pay for the R&D. If the technology is to be developed from within the NCSP R&D for timely insertion into U.S. Government automated systems, the program must be funded adequately to attain the security technology in the desired timeframe.

Question. What DoD policies exist or are planned to assist DoD components in developing, maintaining, and improving computer security safeguards? Who is responsible for enforcing implementation of these policies?

Answer. The following policies provide for the above: (1) DoDD 5200.1, "DoD Information Security Program." This directive updates and reissues policies and procedures of the DoD Information Security Program; (2) DoDD 5200.1-R, "Information Security Program Regulation." This directive provides regulations for the implementation and enforcement of the DoD Information Security Program; (3) DoDD 5200.28, "Security Requirements for Automatic Data Processing (ADP) Systems." This directive establishes a uniform policy for protecting classified information in ADP systems. A major rewrite is near completion; which will expand the scope of this Directive to cover protection of all sensitive information. (4) DoD 5200.28-M, "ADP Security Manual." This manual provides ADP security techniques and methods; (5) DoD 5200.28-STD, "Trusted Computer System Evaluation Criteria." This standard contains security criteria for evaluating commercial computer system hardware and software; (6) DoD Instruction 5210.74, "Security of Defense Contractor Telecommunications." This instruction implements the National COMSEC Instruction; (7) DoDD 5215.1, "Computer Security Evaluation Center." This directive establishes the DoD Computer Security Center; (8) DoDD C5030.58 and C5030.58-M, "Consolidation of Telecommunications Centers Involving Defense Special Security Communications and General Communications." This directive and manual provide security criteria and telecommunications guidance; (9) DoDD 5200.5, "Communication Security." This directive provides for protection of classified communication information; (10) DoDD S-5200.19, "Control of Compromising Emanations." This directive provides for electronic emanation control associated with ADP equipment; and (11) DoDD 5220.22, "DoD Industrial Security Program." This directive provides for the safeguarding of classified information within contractor facilities. In regard to enforcing implementation of these policies, each DoD directive and instruction has an implementation section included. Implementation of some of the Computer Security directives listed is enforced by the Office of the ASD(C^{3}I). Other responsibilities are included in the Office of the ASD(Comptroller) and the Office of the USD (Policy).

Question. What efforts are underway or are planned to give DoD an overview of the magnitude of the risks associated with existing information systems?

NSA answer. Risks can be best measured through the accumulation of empirical data concerning the threats to and vulnerabilities of automated information systems. Currently, "AIS magnitude of risk" is determined on a system by system basis through risk analysis procedures detailed in Component AIS security regulations.

Two programs are presently being developed to gather overview information:

The National Computer Security (COMPUSEC) Assessment Program (NCAP), and

The Computer Security Technical Vulnerability Reporting Program (CSTVRP).

Both of these programs are managed by the National Computer Security Center (NCSC) within the Information Security Organization at the National Security Agency (NSA). The results of these efforts provide a firm foundation of documented vulnerabilities upon which to prioritize programs for national computer security planning and management, as well as to develop national risk profiles.

The NCAP is designed in part to collect, analyze, and distribute information about documented cases of computer crime, fraud and abuse. Computer systems' characteristics are then evaluated against the empirical information gathered on AIS penetrations or their attempts. The results profile systems which may be vulnerable to attack.

The CSTVRP, in the final stages of approval, will promulgate a DoD instruction mandating that DoD Components report technical AIS vulnerabilities. Technical vulnerabilities will be analyzed for their impact on system security. Countermeasures will be developed and the information shared with ADP managers and security officers having a valid need. Input from private concerns is welcomed. The NCSC will be the clearinghouse for technical vulnerability information.

Navy answer. The Department of the Navy Information Technology Resources Reporting System, which covers computers, word processors, and micrographics is being revised to include information on the security of each reportable item.

Air Force answer. In the Air Force, each command is required to develop a central index which will contain information on computers within the command. A standard data base to allow the commands to automate the central index is being examined but, until one is developed, the commands are expected to have the following: a computer security officer; a copy of the last risk analysis, last security test and evaluation, and risks that were assumed; expected "get well" dates for identified deficiencies; and a computer security plan with associated operating instructions. This information is required for each system or, as in the case of small computers, for each office. The Air Force revised computer security regulation will require information to be extracted for annual reporting to the Office of Management and Budget and the National Telecommunications and Information Systems Security Committee.

Army answer. Information Systems Security (ISS) is being stressed for both computers and communication including the following:

a. AR 380-380 is in its second edition. Army automation security policy is relatively mature. What we need now is refinement of technology to provide multilevel security for our systems and networks.

b. NSA's National Communications Security (COMSEC) Assessment Center (NCAC) assesses telecommunications which includes automated equipment that is networked or that communicates. Stand-alone microprocessors have relatively few security problems and the impact of a security problem is less serious for a stand-alone system. The Army's Intelligence and Security Command (INSCOM) does both automation security services and assessments and cooperates with the NCAC in assessing the security posture of Army telecommunications systems, including automated systems that communicate.

c. Risk assessment is part of every Army automated system security accreditation. We have small numbers of personnel devoted exclusively to "threat assessment" (looking at the hostile entities that may try to exploit our systems including not only foreign governments' intelligence organizations, but also terrorists, drug traffickers and other criminal elements on the outside, and disgruntled employees on the inside) and "vulnerability assessment" (looking for the security flaws in our own systems).

d. The Army's "top-down security survey" being conducted in reponse to the Stilwell Commission recommendations is also looking at ISS. The early findings indicate that a serious weakness is the unwatched growth of many systems. A small system may originally be developed and accredited as "sensitive." As new terminals are added and more data is processed, there is a tendency to keep the same accreditation level. We have even found a couple of instances where a system grew to such a point that its data base should be classified "by roll-up." For example, a small system can be used to prepare personnel actions and reports. Soon that system is doing all of a unit's personnel paperwork. Under current rules, if all of the personnel information about an Army combat unit is in the same data base, the "object readiness ratings—personnel" for the unit can be derived from that data base. The readiness score is classified CONFIDENTIAL. Notice that nothing put into the microcomputer is classified. It just becomes that by using a classified report. The users and developers of these types of systems usually aren't aware of their systems new sensitivity until a security service identifies the problem.

Question. Has DoD established a policy that identifies the type of unclassified information to be protected and the level of protection such information requires? If not, does DoD see a need for such a policy, and does DoD plan to issue one? When would it be in place?

Answer. Clearly, there is a need to protect all DoD sensitive but unclassified information. DoDD 5210.74, "Security of Defense Contractor Telecommunications," specifies a definition of sensitive unclassified information relating only to contractor supported efforts. There is a need to define other types of sensitive unclassified data requiring protection. In this regard, the DoD is working with the National Telecommunications and Information Systems Security Committee (NTISSC) on the drafting of a Government-wide policy. This policy is expected to be promulgated this year.

In addition DoD Directive 5200.28 is currently being rewritten. Its scope will be expanded to cover all sensitive information, whether related to national security interests, personal privacy, proprietary concerns, financial interests, etc.

Question. What efforts are underway or planned to provide policy guidance to DoD components regarding the type of information that is considered "sensitive but unclassified" in compliance with National Security Decision Directive 145? When is the planned policy guidance expected to be available? Who will be responsible for its enforcement? To what extent will it identify levels of protection to be afforded to such information?

Answer. Once the National Directive on sensitive information is published, the DoD plans in turn to promulgate in a timely fashion implementing policy and procedures for the DoD components. It is anticipated that this policy guidance will be available sometime in 1986. The policy will be forwarded to the ASD(C ^{3}I) for appropriate oversight. The definition of levels of sensitive information would logically be further defined by each agency head. Levels of information defined will vary according to agency requirements. Moreover, the amount of protection will also depend on specific agency or user needs.

Question. What efforts are underway to clarify the roles of the National Security Agency, the National Computer Security Center, the National Bureau of Standards, and others in the government-wide computer security program?

Answer. The work being done by the National Bureau of Standards (NBS) and the National Computer Security Center (NCSC) is complementary. Our association with them has been cooperative and mutually beneficial. In each of the following areas, joint efforts between NBS and NCSC are ongoing or planned:

Cosponsoring an annual computer security conference;

Developing risk analysis methodology;

Planning and executing computer security research and development;

Evaluating limited-function security products;

Planning and conducting computer security training and awareness activities;

Participating in network security methodology and evaluation criteria development; and

Definition of unclassified government or government-derived information, and non-government information, the loss of which could adversely affect the national security interest.

The National Computer Security Conference, cosponsored by NBS and NCSC, will be held 15–18 September, 1986; 800 to 1000 people from government and industry are expected to attend this year's conference. This annual event is one of the most prestigious computer security conferences held anywhere.

Frequent consultations on computer security related standards and guidelines are conducted between NBS and NCSC. Recently, the Password Management Guidelines document produced by NCSC was published as an appendix to NBS's FIPS 112 publication entitled "Password Usage Standards."

Arrangements have been made for participation of NBS in the formulation and execution of the consolidated Computer Security Program, and NCSC has been invited to participate in the Technical Review Group (TRG), which plans the CSP RDT&E program.

NBS has proposed a joint project in automated information security to assist the NCSC in a number of areas, including:

Working with the private sector to foster better understanding of Secure Automated Information System Subcommittee (SAISS)/National Telecommunications and Information System Security Committee (NTISSC) objectives;

Conducting workshops, symposiums, and conferences;

Developing draft directives and technical documents for submission to the SAISS;

Reviewing technical material submitted to SAISS; and

Defining security information terms and concepts.

Initiatives taken by the NCSC have led to exchange of information on "limited function" (also referred to as "components") security devices, e.g., dial back modems, "smart" cards, and retinal scanners for user identification and authentication. Negotiations have begun that are expected to lead to subcontracting the evaluation of such devices to NBS's ICST. This will enable use to take advantage of their experience in evaluating such devices and their excellent laboratory facilities.

Raising computer security awareness across the entire government and providing the training needed for the massive number of managers, computer operations professionals, and computer users who will need it will be an enormous undertaking. No single organization is equipped to do it alone. A general plan for providing this training has been prepared by NCSC and initial contact has been made with NBS, OPM, and other organizations to encourage their participation in further planning and execution.

NBS has participated in NCSC-sponsored activities to develop methodology for evaluating the security of computer networks. In March 1985 NCSC sponsored a workshop on network security. A number of informal meetings and information exchanges between NCSC and NBS have also been held on this subject.

In addition to the areas mentioned, NBS and NCSC regularly seek each other's help on just about any activity for which the one organization feels that the other's expertise is well suited. For example, NCSC is currently evaluating a passphrase generation algorithm for NBS.

The only two areas in which opportunity for joint or complementary activities might be constrained are:

Activities involving cryptography shall remain the sole responsibility of NSA, and

Activities to implement security beyond the Al level may have to be similarly constrained. Because we have not yet determined how those higher levels of security are to be attained, we cannot predict the sensitivity of that yet to be developed technology and, therefore, reserve judgment.

In summary, the relationship between the NCSC and the NBS has been one of close cooperation and complementary endeavor. The depth and breadth of joint activities has been growing and there is evidence that this growth will accelerate—the opportunities exist. We have already benefited significantly from these activities, and both organizations are eager to expand these mutually beneficial relationships.

Question. In the late 1970's, DoD established a computer security initiative prgram. Is it still in existence? What are its objectives? How much has the program cost from inception through FY 1985? How much has been programmed through FY 1991? What has this program contributed to improving computer security throughout DoD? Does it include protection of unclassified information?

Answer. The initial program in its original form does not exist, however, computer security has been a priority item of the DoD since the early 1970's, when computer security was in its formative years. The establishment of a DoD Computer Security Center in 1981 and National Computer Security Center in 1984 is an extension of the original security initiative and represents a maturing of DoD's original approach to this rather difficult problem area. The original Security Initiative objective was to consolidate computer security efforts for the purpose of advancing technical computer security solutions. Objectives of the current and continuing computer security program, as stated in a Secretary of Defense issuance, are: (1) to expand the scope of computer security to include all computer-driven information systems; (2) to provide expanded guidance on mandatory statements of computer security requirements for ADP procurements; (3) to provide computer security standards and guidelines and to provide guidance in their application; (4) to ensure that all systems are evaluated by a common security criteria; (5) to develop a Computer Security Vulnerability Reporting Program; (6) to develop standard criteria application guidance for network security; (7) to further research and development efforts to assure the continuing applicability of security criteria to emerging technology; and (8) to ensure that adequate resources are applied to the National Computer Security Center mission of hardware and software product evaluation. Program cost for the period FY 1982 through FY 1985 is $76.3 million. The budget/program for FY 1986 through FY 1991 is $365.4 million. The following improvements in computer security as a result of the computer security program, are noted: (1) the formation of the DoD Computer Security Center and the National Computer Security Center for consolidation of computer security efforts; (2) the publication of the "Trusted Computer System Evaluation Criteria" as a DoD Standard (This Standard provides criteria for the purpose of evaluating commercial computer hardware and software products. The products are then assigned to a particular security division or class within a division based on security features contained in the product. An Evaluated Products List is published and distributed to assist DoD components in acquisition and use of trusted computer products); (3) the publication of computer security standards and guidelines for application of the Trusted Computer System Evaluation Criteria to specific operating environments, and for password management (other standards and guidelines are under development); (4) the establishment of a Commercial Computer Security Product Evaluation Program (CCSPEP) (There are currently five available products listed on the Evaluated Products List. Additional products are under evaluation); (5) development of a Computer Security Vulnerability Reporting Program; (6) rewrite of DoDD 5200.28, "ADP Security Policy," to expand its scope and to provide for technical computer security application; and (7) establishment of an aggressive research and development program at the National Computer Security Center to ensure application of computer security to emerging technology.

DoD Directive 5200.28 is being rewritten to expand the scope to include protection of all sensitive information. The current program recognizes the need for protection of unclassified information and addresses it in DoDD 5210.74 for telecommunication systems. The DoD will implement and promulgate a more complete protection policy for unclassified information when the NTISSC draft policy is finalized. Promulgation is expected this year (1986).

Question. A recent Air Force audit indicated that the Air Force has failed to safeguard 77 percent of its computer systems. It cited examples of Air Force facilities which have not conducted safeguard inspections for years. What is the cause of these problems, and what action is the Air Force taking to strengthen its computer security?

Answer. The audit in question addressed TEMPEST issues only and *NOT* computer security. The other actions taken to protect the information and the systems processing the information (i.e., COMSEC, personnel security, information security, and computer security) were not considered by the auditors. At many units, the TEMPEST officer was an additional duty, and advantage was not taken of available training. To correct this, definitive guidance has been given to the commands concerning TEMPEST officer manning and training and the importance of a systems approach to security has been emphasized.

UNECONOMICAL LEASING OF EQUIPMENT

Question. The Committee addressed the issue of buying versus leasing of ADP equipment several years ago and it appears as though the Department has taken to heart the concept that, in the long run, it is cheaper to buy ADPE than to lease.

The Committee recently received a briefing from the General Accounting Office (GAO) on the preliminary results of a review they performed on the Department of Defense policy and procedures concerning acquisition of non-ADP equipment.

The GAO review is an attempt to determine whether or not the Department of Defense is acquiring non-ADP equipment in the most cost-effective manner. The Committee requested the GAO to provide a preliminary briefing on its results because their final report will not be ready until after our hearing schedule is concluded. The questions we raise today are based on our understanding of GAO's findings and we hope that the Committee and the Department can gain a better knowledge of the problem we face in defining the extent of the uneconomical leasing of equipment and, hopefully, arrive at a solution.

BUYOUT OF UNECONOMICAL LEASES

Question. Purchasing rather than leasing some types of equipment is less costly, as demonstrated by the ADPE buyout program. Procurement funding priority should be given to the types of leased equipment that, if purchased, result in the greatest cost savings. Have you identified which types of equipment other than ADP that, if purchased, would result in the greatest cost savings? Name studies or sources which back up your answer.

Answer. The Air Force establishes periodic surveys to determine whether uneconomical leases are being made. However, there has been no Department-wide program to identify what types of equipment other than ADP that would result in cost savings. There are several options open that will improve the purchase versus lease decision without establishing centralized management and a broad data collection system. As you know, we proposed in the FY 1986 budget to fund the purchase of noncentrally managed items with O&M funds. One of the reasons for our proposal was to improve the buy versus lease decisions in the field. The increase in the O&M threshold to $5,000 should also improve the situation.

Question. What efforts are underway to locate and buyout these types of uneconomical (non-ADPE) leases?

Answer. There are regulations in place which require that an analysis of purchase versus lease be made. The Air Force performs periodic survey to identify uneconomical leasing and to establish buyout programs, while the Navy relies on its internal budget process to eliminate uneconomical leases. However there are no plans for a large scale Department-wide effort to locate and buyout these uneconomical leases. We hope the study related to expense/investment criteria will identify actions which can be taken to improve the local manager's ability to buy equipment when it is economically advantageous to do so.

Question. What controls in DoD's budget process ensure that purchase funds are made available to buyout the equipment that is currently leased uneconomically? Do these same controls apply to planned acquisitions?

Answer. The buy versus lease decisions are made at the local level. Regulations require that the decision to purchase or lease any currently leased equipment or planned acquisition be based on an analysis to determine which option is more economical. However, the budget system does not include the level of detail that would be necessary to determine which purchase versus lease decisions are economical and which are not. Consequently, the budget process per se does not have the controls envisioned in this question. The budget review process, particularly within the Services, does weed out some uneconomical leases, but the lease data are not readily visible because of the aggregation of requirements in budget presentation. Thus, we must rely on the local levels to eliminate the uneconomical leases.

REPORTING OF EQUIPMENT LEASES

Question. Neither DoD, nor the military department, their bases or commands have reporting systems that aggregate data on all equipment leases. If total DoD leasing is not known, how can DoD make decisions to buyout equipment that is currently being leased uneconomically?

Answer. The amount of data differs among Services. The Air Force performs periodic surveys and has requested procurement funds to buyout some base procured equipment. Office automation equipment is being bought out in the Services. However, we do not feel that setting up a data collection system to determine how much DoD equipment is leased is the way to solve the problem of uneconomical leases. First of all, leases are not necessarily uneconomical. Second to collect detailed information on equipment leasing would be time-consuming and costly. Third, such a data collection system would lead to more centralization. The equipment in question are primarily small dollar value items and the decision to purchase or lease such items should be made by the subordinate command or local levels.

Question. Do you feel that this information is useful in managing leased equipment? If so, at which levels?

Answer. We do not support the concept of central management of lease versus purchase of small dollar value equipment. Rather we would prefer to make the resources available to the local manager or to the subordinate commands of the Services to either purchase or lease equipment based on results of an economic analysis.

Question. What steps can be taken to solve the problem of the lack of information about uneconomical leasing in DoD, and what would be the cost?

Answer. Collecting information on equipment leasing would be cumbersome. The decision on the purchase versus lease of equipment is made at all echelons of the Department but particularly at the local level. To design a meaningful information collection system would be time consuming and costly and would result in more centralization of the equipment procuring process.

EXPENSE/INVESTMENT CRITERIA

Question. Last year, the Department proposed the elimination of dollar thresholds to determine funding of equipment purchases between operating and procurement accounts. DoD's proposal would have done away with the $3,000 limit on procuring equipment with O&M funds. Instead, DoD proposed that the determination as to how equipment is funded be made on whether the item was centrally managed, with no consideration of price. The Congress denied the change primarily because of fears that O&M funds could be buying $2 million items of equipment with little or no oversight. The Congress chose instead to raise the limit on O&M purchases from $3,000 to $5,000.

In your opinion, is the presence of the O&M dollar threshold one of the predominant reasons for the existence of so many uneconomical leases at field-level activities?

Answer. While it may not be the predominant reason for the existence of the uneconomical leases, the O&M dollar threshold is certainly a contributing factor since it prohibits local activity commanders from purchasing the required equipment with O&M funds. The real problem, however, appears to be the lack of procurement funding available at the local level. This stems in part from the longer leadtimes required for local managers to successfully compete with higher priority programs for procurement funding during the budget process and the problem for local installations to obtain additional procurement funds during the execution year. In the latter instance, because procurement funds are distributed in small amounts across many installations, it is difficult to reprogram funds quickly from one installation to another. This inability to quickly obtain procurement funding often limits the ability of the local commander to make responsible decisions on whether to lease or to purchase the required equipment.

Question. If the field commanders had more flexibility to purchase items of equipment could it help reduce the number of uneconomical leases?

Answer. Yes. We are confident that the number of uneconomical leases would be reduced if local commanders had more flexibility to purchase noncentrally managed items of equipment. Our proposed revision of the expense/investment criteria was designed to increase flexibility at the local level and to better align funding authority with organizational responsibility.

Question. What is the status of the study directed by the FY 1986 Defense Authorization Act regarding the need for further changes in expense/investment criteria? When can we expect a report?

Answer. We plan to initiate the directed study in May by visiting several installations and reviewing the ways that the Services are managing both Operation and Maintenance and Procurement funds. During the study, we will evaluate the extent of the problem at the local level and identify management initiatives which would increase the local commander's flexibility to make economical decisions whether to lease or buy a particular item of equipment. If we determine that there is sufficient basis to revise the current O&M threshold, we will submit a report with the FY 1988 President's budget.

Question. Will this study also be able to document potential savings to be had if the threshold is substantially increased with resulting decreases in uneconomical leasing and repair of equipment?

Answer. Because of the decentralized management of these items and the large number of local activities which would be affected by a change in the criteria, we will be unable to document potential savings to be achieved if the threshold were substantially increased. I would like to emphasize, however, that we are not restricting our study to the proposed change in the expense/investment threshold, but are also examining other management initiatives which might provide local commanders with greater flexibility.

COMPLIANCE WITH FEDERAL ACQUISITION REGULATION (FAR)

Question. Federal Acquisition Regulation 7.4 requires that lease/buy analyses be done for new contracts and contract renewals. Generally, the Services don't do lease/buy analyses, particularly for renewals. Why aren't the military departments complying with the FAR requirement to do the required lease/buy analysis?

Why haven't the services done lease/buy analyses for most of their telecommunications equipment?

Answer. The GAO report addressing lease/buy analysis has not yet been released to DOD for comment. If lease/buy analysis are not being done, the DOD Components will be requested to comply with the FAR.

Question. How can DOD provide any assurance that equipment is being acquired in the most cost-effective manner if lease/buy analysis aren't done or followed?

Answer. DOD policy is to comply with FAR requirements.

Question. What DOD organization monitors compliance with the Federal Acquisition Regulations and assures that the most cost-effective method is generally used?

Answer. Heads of procuring activities in the DOD Components monitor compliance with the FAR.

Question. When lease/buy analyses show that purchase is the most cost effective procurement method why is the equipment still leased?

Answer. If leasing is used when procurement is more cost effective, the DOD components will be requested to comply with the FAR.

LACK OF PROCUREMENT FUNDS

Question. Audit reports and economic anaylses have repeatedly shown that purchasing is generally more cost-effective than leasing for most equipment items. However, it appears that uneconomical leasing is a recurring problem in DoD. Base and command-level officials cite lack of procurement money as the cause.

Do you agree that DoD is leasing equipment that would be more economically purchased?

Air Force answer. Yes, the Air Force is still leasing some equipment that would be more economically purchased. However, the uneconomical lease problem has been or is being eliminated ahead of schedule for ADPE and Word Processing Equipment. There are still uneconomical leases in the other base support equipment area. However, $8.0 million has been budgeted in FY 1987 in Other Procurement funds for the buyout of most of these remaining uneconomical leases.

Navy answer. The current plan is to complete the buy-out of all uneconomically leased automatic data processing equipment in the Operations and Maintenance account by the end of fiscal year (FY) 87 which is a full year ahead of the initial schedule. This buyout initiative has been expanded to all appropriations and funds and now includes word processing and office information systems under the buy-out program. The portion of the program relating to the buy-out of equipment leased in Research, Development, Test, and Evaluation and Industrial fund accounts is planned for completion in FY-88. Navy policy favoring purchase rather than lease also extends to Command Support Equipment. Purchase funds are programmed and budgeted in Other Procurment, Navy, and if the economic analysis dictates that purchase is the best option, funds are used for this purchase. Funds ranging from $3M to $6M per year have been programmed in the FYDP for the purchase of such items as postal and copying equipment.

Army answer. Yes, the Army has found that restrictions on use of local operating funds for purchase of relatively low dollar value equipment for garrison level equipment have resulted in local commanders leasing necessary equipment—primarily for office automation, word processing, copying and duplicating.

However, for the past two years, we have been actively pursuing the buyout of our automation and word processing leases and we expect to eliminate the uneconomical leases by the end of FY 87.

Question. Are DoD activities citing lack of procurement funds as a justification for leasing that would otherwise be considered uneconomical?

Air Force answer. The lack of procurement funds as the reason for the uneconomical lease has been cited to the HAC Surveys and Investigations staff when they prepared their "Staff Study Pertaining to Alternative Methods of Financing Items of Equipment," dated March 18, 1985. The investigators found that the $3,000 threshold which determines whether an item must be funded with Operation and Maintenance or Other Procurement funds was too low and should be raised to permit more base procured equipment purchases with Operation and Maintenance funds.

To remedy this situation, the Air Force along with the other Services proposed in the FY 1986 President's Budget that all locally procured equipment items which are not centrally managed and controlled be purchased with Operation and Maintenance funds and that only centrally procured and managed equipment items be purchased with procurement funds. The Congress disapproved this initiative, but raised the expense/investment threshold from $3,000 to $5,000. Thus the root cause of the uneconomical lease problem is the still relatively low expense/investment threshold which forces the preponderance of base procured investment equipment items over the $5,000 threshold into the category requiring procurement funding.

Despite the above problems, the Air Force has taken aggressive action to buyout the uneconomical leases. The ADPE and Word Processing Equipment lease buyout will be completed ahead of schedule in FY 1987, and for FY 1987 procurement funds have been requested to buyout most of the remaining uneconomical leases in the other base support equipment category, e.g., copying, printing/duplicating equipment, etc.

Navy answer. Under current Navy procedures, activities must program and budget all acquisitions of ADP and Command Support Equipment as purchase actions, except those acquistions for which economic analyses clearly establish the economic benefit of lease rather than purchase. The $5,000 (formerly $3,000) threshold above which procurement rather than operating funds must be used to purchase equipment, however, does lead to difficulty, especially when requirements emerge after the POM and budget are approved in Navy. At that point there is limited flexibility to accommodate new requirements from procurement accounts. The increase from $3,000 to $5,000 in the expense/investment threshold is a positive step, as was the flexibility in the one-time proposed DOD ADP fund. Further increases in the expense/investment criteria threshold and successful establishment of a flexible DOD ADP fund would help to eliminate this problem.

Army answer. Yes, the Army study last summer showed that both the lack of procurement funds and the exceptionally long lead-time for the justification and acquisition of the funds "force" activities into leasing arrangements to get the work done. These leasing arrangements can be funded with local funds and have the contracts executed through local contracting offices while the procurement-funded items, once the funds are finally received, often have to be procured through goverment "monopoly" sources, thus delaying even further the delivery of the needed items.

Even though the above situation exists, intensive efforts have reduced uneconomical ADP leases to the point where we expect to eliminate them by the end of FY 1987.

Question. Do you believe that lack of procurement money is a significant cause of uneconomical leasing, or are there other reasons such as lack of base-level planning?

Air Force answer. In the past uneconomical leases were entered into due to the lack of procurement funds. However, in FY 1984 the Air Force initiated aggressive programs to buy out all uneconomical leases for ADPE and Word Processing Equipment. Our current plan indicates that the Air Force will be able to complete its Operation & Maintenance buyout for these systems a full year ahead to schedule.

In the FY 1987 President's Budget we have further budgeted $8.0 million in the Other Procurement appropriation specifically for the buyout of uneconomical leases in the other base support equipment category, e.g., copying, printing/duplicating machines, mailing equipment, etc.

Navy answer. The current plan for completion of our Operation and Maintenance buyout is a full year ahead of the original schedule. Funds in the Other Procurement appropriation are specifically available for purchasing of other Command Support Equipment. These funds are utilized as the economic analysis dictates that purchase is the answer. Valid requirements do arise after the budget has been submitted, often for low-cost equipment, and lack of procurement funds can sometimes be a problem. The increase in expense/investment threshold from $3000 to $5000 should alleviate that situation somewhat.

Army answer. Lack of procurement funds is often thought to be the problem, but the real problem is the limitation on the use of local operational funds for the purchase of small dollar value automation/microcomputing equipment. Our regulations controlling the use of local operating funds have simply not kept up with the changes that miniaturization and expansion of microcomputing technology have brought into the commercial marketplace. A comprehensive Army-wide study of our commercially available equipment needs last year revealed that over 85% of our requirements would be accommodated with local operating funds if the dollar ceiling for use of operating funds was increased to $25,000 from the current $5,000 ceiling. It is the Army position that establishing the higher threshold for use of local operating funds will do more to rectify the problem than simply adding procurement funds.

By letting the local commander apply his operating funds to these requirements, we have given him the opportunity to make smart business decisions regarding the operations of his activity/installation. He can make his long overdue productivity investments from his available funds, thus taking advantage of the marketplace and commercial advances, and can reapply benefits into other mission improvements for his organization. Retaining the separate and limited procurement funding for these ordinary commercial items actually eliminates the incentives to improve local productivity since the acquisition of these procurement funds is on a long lead time cycle (over three years) and so few funds ever materialize.

Notwithstanding this situation, Army actions to eliminate uneconomical leases in ADP and word processing equipment are progressing on schedule and should be completed in FY 1987.

Question. What steps have been or need to be taken to provide sufficient procurement funds to stop continual uneconomical leasing?

Air Force answer. In addition to the funds for ADPE buyout during FY 1984 through FY 1985 ($98.9 million), the Air Force programmed and budgeted FY 1986 Other Procurement funds ($37.3M) for continued buyout of uneconomical ADPE/WPE leases. In the FY 1987 President's Budget, we have further budgeted $8.0 million in the Other Procurement appropriation specifically for buyout of uneconomical leases identified in the other base support equipment category, e.g., copying, printing/duplicating machines, mailing equipment, etc. If the FY 1987 funds are appropriated, most remaining uneconomical leases funded with Operation and Maintenance funds can be bought out. The Air Force has further instituted or strengthened its control procedures to preclude unjustified leases.

Navy answer. The Navy initiated a fiscal year 1985 reprogramming action to Congress to offset an undistributed reduction to budget activity 7 of the Other Procurement, Navy appropriation. Included in that reprogramming action were funds for the buy-out of uneconomically leased automatic data processing equipment. Navy is emphasizing existing policies and expanding its control procedures to preclude unjustifiable leases. The budget review process has aided greatly in the decline of lease actions both ADP and Command Support Equipment. Purchase funds are in FYDP.

Army answer. There are two key steps that need to be taken to provide sufficient funding for the acquisition of equipment instead of uneconomical leases. The first is to raise the threshold for the acquisition of equipment with local operating funds from the current $5,000 limit to $25,000. This would cover 85% of the Army's annual requirements for locally managed commercial items and would give the local commander the responsibility and authority to acquire these items from local funds. It would eliminate the artificial barrier between locally managed funding and missions and the procurement funds.

The second thing that needs to be done is to stop having multiple approval thresholds for small purchase, local purchase and expense items and to tie all of these approvals together into one level—and have that level established by the small purchase dollar value established in Title 10, Chapter 137 of the US Code. This would serve to eliminate the confusion on operational constraints at the local level and would tie the threshold to the national market trend for small purchase definition.

However, in order to complete the buyout of uneconomical leases, the Army has budgeted more than $26 million in each of FY 1986 and FY 1987.

LEASING TELEPHONE SETS

Question. An Army Audit Agency report and a subsequent Army Information Systems Command economic analysis have shown that significant savings could be achieved if Army (telecommunications) customer premise equipment, such as telephone sets, were bought out. However, Systems Command officials reported they did not expect the Army/Command to provide funds for a one-time buy out.

Given that significant savings could be achieved in all three Services if telecommunications customer premise equipment were purchased, why aren't the Services planning to purchase this equipment?

OSD answer. Customer premise equipment should be bought out if it makes good economic sense and does not jeopardize mission needs. Economic analyses are being performed, taking into consideration subsequent logistics/maintenance costs. Additionally, the condition and the supportability of the equipment to be purchased are being analyzed. The Services, upon completion of the analysis, are programming to buy out or recompete the purchase of the customer premise equipment where feasible and when procurement dollars are available.

Air Force answer. At the Air Force locations where we perform operations and maintenance, we own customer premise equipment. We also own equipment at some contractor-operated and maintained locations. When the Air Force buys instruments at contractor-maintained locations, it must separately contract for maintenance and provide for replacement spares. Arrangements for leased instruments include maintenance or replacement at no additional cost. Added maintenance costs and replacement inventory requirements are factors which must be considered when the decision is made to continue current leased arrangements pending competitive replacement of entire systems or to purchase customer premise equipment prior to system replacement. These factors are weighed by the MAJCOMs in making the decision to purchase or lease. When we competitively replace entire systems, we acquire customer premise equipment as part of the total system through the most cost effective financing arrangement.

Navy answer. In the Navy the procurement of Customer Premise Equipment (CPE) is not centralized and is the responsibility of the activity. Navy has an ongoing program to replace/upgrade shore telephone equipment. As this program proceeds, Navy conducts an economic analysis to determine whether systems should be leased or bought. Achievable savings are reflected within the budget estimates submitted.

Army answer. The Army has been aggressively purchasing telephone instruments instead of continuing to lease them. In FY 1986 $3 million will be spent on buying out telephone instrument leases. In FY 1987 both the US Army Information Systems Command and the Defense Telephone System-Washington have plans to continue to buy telephone instruments. The only area in which telephone purchases will be delayed are installations that are scheduled to receive new electronic switching systems within the next 12–18 months. When new switches are procured the Army plans to purchase Dual Tone Multiple Frequency (DTMF) telephone instruments (Touch Tone instruments) which are necessary in order to maximize new Electronic Switched System (ESS) capabilities.

Question. Given the high dollar savings associated with purchasing and the fact that certain types of telecommunications equipment (such as switches) are ADPE, should telecommunications equipment be included in the ADPE buyout?

Answer. Although state-of-the-art telephone switches are controlled by a central processor, the main function and intent of the telephone switch is to transfer information and not process data. Thus, a telephone switch is categorized as telecommunications equipment, not ADPE, and should not be included as part of the ADPE buy out. However, procurement dollars should be made available to accelerate the Services' switch procurement programs where purchasing is more advantageous. As an alternative and due to rapid technological changes in the telecommunications world, consideration should be given to leasing telecommunications services where it is economically and operationally beneficial to do so.

Air Force answer. The Air Force does not consider telephone switches as ADPE. Telephone switches are defined in DFAR 37.7401 as communications services. The *Rolm Corporation,* Comptroller General Decision B–218949, 22 Aug 85, states telephone switches are regarded as telecommuncations devices. 41 CFR (Chapter 201, Part 201–2.001) defines ADPE and specifically excludes designed systems which act as control functions (e.g. telephone switches).

Navy answer. Navy plans to replace shore communications equipment as necessary. If purchase is most economical, it will take place during that replacement. We believe that to be the most effective means of managing the issue of buy-out of communications equipment. Combining it with the ADPE lease/buy program, particularly in view of the differences in management of the two programs in Navy, is not advisable.

Army answer. The Army currently has a plan to competitively replace leased telecommunications systems in the most expeditious and cost effective manner. Under the Army's accelerated switch acquisition plan, the goal is to have every switch owned by the Army in FY 1990. This switch replacement, as part of the CONUS telephone modernization program, is well under way and the Army has already begun buying out uneconomical leased telephone switches. Since the ADPE lease buyout program is scheduled for completion in FY 1988, the inclusion of telecommunications equipment into this program would not be advantageous to the expeditious completion of the ADPE buyout program or the switch replacement program.

Question. The Services still lease many telecommunications switches even though it appears that direct purchase is more cost-effective. Why are switches being leased?

Answer. Telecommunications switches should be obtained by the most cost-effective method based on its overall life cycle costs. Although purchasing is usually the least expensive, there are cases where leasing makes good economic sense. Additionally, including leasing and leasing with option to buy as part of our acquisition strategy will increase the area of competition for these services.

Air Force answer. Switches are currently being leased under a previous leasing arrangement (Communications Service Authorization) established in the pre-deregulation period. Service was acquired under a straight lease arrangement in the regulated environment from the local franchised carrier. The equipment is antiquated and, in most cases, out-of-production. We do not want to add the equipment to the Air Force inventory because it is not logistically supportable. We are competitively replacing the service at these locations as quickly as funding will permit. We solicit cost proposals for straight lease, Lease With Option to Purchase, and direct purchase and contracts are awarded based on the lowest total overall life cycle cost.

Navy answer. Historically (before the divestiture at AT&T), the Navy leased its switches from the local telephone companies and connecting networks from AT&T, because it was the most efficient, practical and least expensive way to provide a homogeneous system with end-to-end responsibility for operation, maintenance and repair. Few, if any, activities had the personnel with the expertise, the funds or the desire to take over or get involved in such a highly technical and complex field. Consequently, most of this function was left to the local telephone company.

With the advent of divestiture, new technologies and the requirement to competitively bid all new systems and equipment, the Navy is now in the process of reviewing and scheduling all of our activities' systems and requirements with the intent of upgrading services as and where required in order to bring the Navy's shoreside telecommunications systems up-to-date.

An economic analysis is performed on the leased switches and the most effective method of securing the required services is determined at that time. The process used to procure new administrative telephone switches is to place a competitive bid contract with a vendor/supplier for all services required for a period of ten years with the option of ownership at the end of the contract period.

Army answer. The Army continues to lease switches for a variety of reasons. First, several switches would not be economical to purchase at this time because of contractor termination charges. Second, the Army owns several antiquated switches which are in serious need of replacement. These antiquated switches must be replaced immediately, before all of the currently leased switches are purchased, in order to meet critical Army mission requirements.

Question. How many switches are currently leased by each of services?

Air Force answer. The Air Force has current straight lease arrangements at 163 bases. These leasing arrangements are being replaced by competitive acquisition with either straight lease, Lease With Option to Purchase or direct purchase based on the lowest total overall life cycle cost.

Navy answer. The Navy is leasing 127 switches worldwide.

Army answer. 36 switches are currently leased.

Question. How much do they cost?

Air Force answer. Accurate information on total lease costs for each of the locations is not available on short notice. However, information on a range of switch sizes is:

a. Small switch (Vance AFB OK): 700 total line capacity, $296,210/year.

b. Medium switch (Homestead AFB FL): 2,200 total line capacity, $1,777,154/year.

c. Large switch (McClellan AFB CA): 6,000 total line capacity, $1,920,000/year.

Navy answer. The annual lease cost is estimated at $48,675,000 (does *not* include maintenance/repair parts, telephone instruments and distribution plant).

Army answer. The overall cost for the current leased switches is approximately $9 million per year.

Question. How much could be saved in each Service if the leased switches were purchased?

Air Force answer. An estimate cannot be provided as actual savings would depend on the competitive process for each location. Our experience in the competitive environment has been that direct purchase, while more cost effective than straight lease, is usually not as cost effective as lease with an option to purchase. For example, at Minot AFB, $3,354,964 was saved over the ten year life cycle of the contract by awarding a lease with option to purchase rather than a straight lease. However, it would have cost the Air Force $325,050 more over the life of the contract had we awarded a contract based on direct purchase financing rather than a lease with option to purchase. At Des Moines MAP, $30,465 was saved by awarding a lease with option to purchase rather than a straight lease. It would have cost the Air Force $1,642 more over the life of the contract had a direct purchase rather than a lease with option to purchase been awarded.

Navy answer. The specific savings are dependent upon the age and type of equipment, and on the useful life-cycle. That detail is not available at this time. However, as we execute the plan to replace the equipment, we will perform a lease-buy analysis on the contracts to identify and recoup savings.

Army answer. If these switches were purchased, savings are estimated to be between $700,000 and $1.2 million per year.

Question. Described any existing plans for the services to purchase leased switches.

Air Force answer. The Air Force will not purchase any existing leased switches excluding those which have a lease with option to purchase contract obtained via the Scope Exchange program. These switches will be purchased by exercising the purchase option of the contract in the optimum buyout year. Except for one system acquired as a small business set aside under the Scope Exchange program, systems providing service under a straight lease arrangement are antiquated, logistically unsupportable equipment. In addition to the logistics support problems that adding these systems to the Air Force inventory would create, the acquisitions would be sole source which is not justified in today's competitive telephone industry. In keeping with 10 U.S.C. 2304 and its recent amendment, the Competition in Contracting Act, DOD policy stipulates that we will solicit full and open competition to the maximum extent possible.

Navy answer. Navy plans to purchase Defense Switched Network (DSN) switches beginning in Europe/UK in FY 89 and out years. A similar approach is underway in the Pacific area. Navy will evaluate DSN switch requirements in the Western Hemisphere when specific sites are identified.

Army answer. In FY 1986 two leased locations were bought out: Oakland Army Depot and Vint Hill Farms Station. The Army plans to competitively replace our leased systems in the most expeditious and cost effective manner. Under the Army's accelerated switch acquisition plan, the remaining 36 leased switches will be procured by FY 1990. In FY 1987 the following leased locations are scheduled for buyout: Fort Irwin, Umatilla Army Depot, and Yakima. The Army continues to look for economical approaches to satisfy user telecommunications requirements. It has been found that a staged leased switch buyout provides the necessary balance between economic buyout considerations and critical mission requirements.

TELEPHONE SYSTEM REPLACEMENT

Question. Previously, the Air Force, in its Scope Exchange program, planned to replace its telephone systems by leasing new equipment. Does the Air Force still intend to lease telecommunications systems replacements?

Answer. The Air Force intends to lease telephone system replacements only when a leasing (straight lease or lease with an option to purchase) provides the lowest total overall life cycle cost. In the early stages of the replacement program, the Air Force awarded one straight lease contract. The contract was a small business set aside and Lease With Option to Purchase or direct purchase pricing was not solicited from the 8A contractor. We now solicit direct purchase, straight lease, and lease with option to purchase pricing proposals for all contracts, including small business set asides. The lowest total overall cost is determined during pricing analyses of contract proposals. So far, direct purchase has been determined to be the most cost effective option for only one location. For all other locations, Lease With Option to Purchase has been determined to be the most cost effective. We will continue awarding contracts based on the lowest total overall life cycle cost.

Question. What is the current status of its telephone system replacement program?

Answer. To date, the Air Force has competitively contracted for twenty-one (21) systems. Ten (10) are operational and eleven (11) are being installed. Actions are underway for competitive acquisition of fourteen (14) additional systems in fiscal years 1986 and 1987 under the Scope Exchange program.

The fiscal year 1986 program for replacement of government maintained switches, Scope Dial, has been executed. This program replaces switches only and is funded from Other Procurement appropriations. The 5-year requirements contract for switch acquisition expired on Dec 31, 1985. A new 5-year switch requirements contract will be awarded in fiscal year 1987 under the Base Information Digital Distribution System program.

The Base Information Digital Distribution System program will replace both Scope Dial (fiscal year 1987) and Scope Exchange (fiscal year 1988). Under this program, the Air Force will competitively acquire and install: digital switches; distribution plants; distribution plant testing sets; customer premise equipment; and, where required, contract operations and maintenance. The Request for Proposals for the switch acquisition portion of Base Information Digital Distribution System is due for release to industry in the near future.

Question. Are the other services replacing their telephone systems and if so, are they doing it through a lease or buy?

Navy answer. The Navy is in the process of replacing or upgrading its shore telephone systems. The procurement process can take many forms, but in general, the critieria that will be followed is to evaluate the procurement for the best economic value and maximum competition.

Army answer. The Army currently has three (3) ongoing telephone system replacement programs: CONUS Telephone Modernization Program, European Telephone System (ETS), and Korean Telephone Upgrade. All planned switch replacements will be accomplished by purchase rather than lease. The current status of the Army telephone replacement programs is as follows:

CONUS telephone modernization:	
Planned switch replacements	78
Switches under contract	27
Switches currently operational	11
In various stages of installation	16
European telephone system—phase I:	
Planned switch replacements	131
Switches under contract	127
Switches currently operational	59
In various stages of installiation	68
Korean telephone upgrade:	
Planned switch replacements	29
Switches under contract	29
Switches currently operational	1
In various stages of installation	28

CAPITAL BUDGET

Question. Certain members of Congress and the General Accounting Office have criticized the federal government's practice of budgeting and accounting based on the amount of cash needed in a particular year. This reliance on a cash-basis financial system is considered to be one of the prime reasons for uneconomical leases. In order to avoid big cash outlays the federal government will lease buildings, equipment and services even though the leases cost more in the long run. There has been some discussion about developing a new financial system for the federal government which would provide for a long-term capital budget in addition to the current annual cash budget. Proponents claim that the primary purpose of the capital budget would be to call attention to long term investments.

Has the Department of Defense studied this proposed system and, if so, what is your position?

Answer. OMB is currently looking into the pros and cons of capital budgeting but the Department is not aware of any specific proposal on a capital budget concept. Therefore the Department cannot provide any opinions or details on how such a system would operate.

Question. How effective would a capital budget reporting mechanism be in revealing costly long-term assets that are currently financed by yearly leases?

Answer. At this time the Department does not have any specific information on how a capital budgeting system would function. In the absence of this information, we cannot say how effective capital budgeting could be in resolving lease versus buy problems.

Question. How would lease versus purchase decisions be effected by creating a capital budget?

Answer. Without knowing the concept of operation or specific data requirements, the Department cannot comment at this time.

Question. Do you recommend any other alternatives for calling attention to long-term assets and encouraging purchasing rather than leasing?

Answer. It is our belief that leasing is not necessarily uneconomical but that equipment requirements should be reviewed to determine whether it is more economical to lease or to purchase. The regulations are in place requiring such an analysis. However, in order to insure that the most economical decision is made, the decision maker must have the funds available to either purchase or lease. Currently, at the local level, O&M funds are readily available, procurement funds are more difficult to obtain. There is a longer lead time for procurement funds and the small dollar items must compete with the higher priority programs for procurement funding. Some alternatives being considered are to make procurement funds more readily available or to allow the use of O&M funds to purchase a wider range of equipment. Our initial recommendation to use O&M funds to purchase noncentrally managed items was rejected by Congress but the dollar threshold for O&M purchases was raised. We have not had sufficient time to determine the impact of the increased threshold and to develop recommendations for further action.

MAISRC PROCESS

Question. How many reviews of DOD's major AIS's have been conducted since the MAISRC was established in 1979?

Answer. Since 1979, a total of 47 reviews have been held:

14 MAISRC Milestone Reviews;

12 MAISRC In-process Reviews (IPR's);
9 Staff IPR's;
12 on-site Reviews.

Question. Provide a list of the systems and review date.

Answer.

System	Review date	Type review
Base Level Data Automation Program (Phase IV)	October 1980	Milestone.
	June 1981	Staff IPR.
	December 1981	IPR.
	August 1982	Staff IPR.
	January 1983	Milestone.
	January 1984	IPR.
	November 1984	Staff IPR.
	March 1985	IPR.
	August 1985	IPR.
Air Force Logistics Command Modernization Program (AFLC)	February 1980	On-site.
	June 1981	IPR.
	July 1982	Milestone.
	August 1983	On-site.
	August 1984	On-site.
	November 1984	Milestone.
	July 1985	IPR.
	February 1986	IPR.
	April 1986	On-site.
Foreign Military Sales Financial Management Improvement Program (FFMIP)	December 1984	Milestone.
	June 1985	Milestone.
	August 1985	On-site.
	November 1985	On-site.
	February 1986	Milestone.
Pay and Personnel Source Data System (SDS)	June 1981	Staff IPR.
	April 1982	Milestone.
	June 1985	IPR.
	December 1985	Milestone.
Tri-Service Medical Information System (TRIMIS)	May 1979	Milestone.
	June 1981	On-site.
	November 1982	Staff IPR.
	January 1984	Milestone.
	August 1984	IPR.
	December 1984	Milestone.
	March 1985	IPR.
	December 1985	IPR.
DLA Modernization	May 1980	Milestone.
	August 1980	On-site.
	March 1986	Staff IPR.
Vertical Installation Automation Baseline (VIABLE)	January 1980	On-site.
Defense Warehouse and Shipping Program (DWASP)	July 1981	Staff IPR.
Naval Aviation Com. Mgt. Information System (NALCOMIS)	March 1981	On-site.
Navy Laboratories Technical	October 1983	Milestone.
Office Automation Communications Systems (NALTOACS)	July 1985	IPR.
Shipyard/Ordnance Eclectic System (SHORES)	June 1985	On-site.
Army Civilian Personnel System (ACPERS)	March 1986	On-site.
Continental Army Management Information System (CAMIS)	July 1985	Staff IPR.
Vertical Force Development Management Information System (VFDMIS)	October 1985	Staff IPR.

Question. How many of the MAISRC reviews resulted in approval of the Systems Decision Paper (SDP) process?

Answer. The SDP is the vehicle for providing information to the MAISRC. Based on the SDP and the information provided at the meeting, Systems Decision Memoranda which provide guidance and approval have been prepared subsequent to the 26 MAISRC's held to date.

Question. How many were in-process reviews?

Answer. Twelve of these MAISRC meetings were in-process reviews.

Question. Provide a list of all major DOD automated information systems and their currently estimated life cycle costs. For each system, show the years covered during the life cycle and the definition of life cycle used for the particular system. Show which are reviewed by OSD, and which are delegated to the Services.

Navy answer. Navy defines life cycle costs as total cost over time for a system. It includes the cost of development, the cost of procuring all necessary resources, and the cost of operating the system through its expected life. The attached chart depicts this definition.

[In millions of dollars]

Name	SECDEF Review	LCC	System Life
Source Data System	Yes	643.8	FY 85–FY 00
Stock Points Automatic Data Processing Replacement Project	Yes	1,500.0	FY 87–FY 15
Integrated Automated Intelligence Processing System	Yes	171.3	FY 80–FY 90
Navy Laboratories Technical Office for ADP and Communication System.	Yes	135.0	FY 85–FY 90
Integrated Disbursing and Accounting Financial Information System	No	207.0	FY 80–FY 91
Data Processing Installation (DPI) Equipment Transition Project	No	485.0	FY 82–FY 91
Standard Automated Financial System	No	134.8	FY 79–FY 91
Naval Aviation Logistics Command Management Information System	Yes	568.3	FY 77–FY 93
Uniform Inventory Control Point Redesign	No	550.0	FY 84–FY 91
Stock Points Logistics Integrated Communications Environment	No	171.0	FY 84–FY 95
Bases and Stations Information System	Yes	109.1	FY 84–FY 93

Air Force answer. The major DOD automated information systems reviewed at OSD level and the systems reviewed at the component level are as follows:

MAJOR AUTOMATED INFORMATION SYSTEMS REVIEWED AT OSD LEVEL

System	Life Cycle Cost/Yrs Covered	Life Cycle Definition and Remarks
AFLC Modernization Program	$1,700.4M (84–97)	Program initiation through ten years of operational life after initial Operating Capability (IOC).
Base Information System Program (Phase IV).	$5,000M (77–97)	LCC include conversion, implementation and acquisition through Final Operating Capability (FOC) plus ten years operation and maintenance costs.
Commander Center Processing & Display System-Replacement (CCPDS–R).	$232M (86–92)	The LCC represents all costs through FOC which is in 1992.
Personnel Concept III	$212.2M (87–92)	The LCC represents acquisition and implementation costs through FOC which is in 1992.

MAJOR AUTOMATED INFORMATION SYSTEMS REVIEWED AT AIR FORCE LEVEL

System	Life Cycle Cost/Yrs Covered	Life Cycle Definition and Remarks
Air Force Capability Assessment Program (AFCAP) (formerly AFIRMS).	$248M (86–96)	LCC covers definition, design, development, testing and training through estimated FOC in 1995. However, the program has recently been redefined and restructured and estimated costs are subject to adjustment.
Core Automated Maintenance (CAMS).	$163M (83–91)	Acquisition to FOC plus three years of operation and maintenance.

MAJOR AUTOMATED INFORMATION SYSTEMS REVIEWED AT AIR FORCE LEVEL—Continued

System	Life Cycle Cost/Yrs Covered	Life Cycle Definition and Remarks
Air Force WWMCCS Information Systems (AFWIS).	$437M (86–92)	Acquisition through Final Operating Capability (FOC).
Local On-Line Network System (LONS)	$244.8M (85–90)	Acquisition through estimated FOC in 87 plus three years operation and maintenance.
1 ISG Modernization (Honeywell Systems Replacement Program).	$165.5M (86–98)	Acquisition through FOC.
Automated Technical Order System (ATOS).	$39.52M (85–93)	Phase I: Acquisition plus eight years.
	$84.2M (87–96)	Phase II: acquisition plus ten years.
MAC Information Processing System	$450M (86–90)	Acquisition to FOC.
Strategic War Planning System	$488M (86–92)	LCC includes hardware and software upgrades, addition of new technology terminals and graphics devices, computer equipment, maintenance and computer resources to develop and modify computer programs and integrate new weapon systems into the war planning process.

Question. Provide a list of all major DOD automated informations systems and their currently estimated life cycle costs. For each system, show the years covered during the life cycle and the definition of life cycle used for the particular system. Show which are reviewed by OSD, and which are delegated to the Services.

Army answer. The complete information is not currently available at the departmental headquarters. A message has been dispatched to all Project Managers to obtain life cycle cost estimates for all major automated systems. The information from the Project Managers is anticipated by July 16, 1986 and will be provided by July 25, 1986.

Question. What is the OSD definition of life cycle?

Answer. The life cycle is the period from the mission analysis/project initiation phase of a system through its termination, or through implementation of a major change. A major change, marked by a new mission analysis/project initiation phase, represents the beginning of a new life cycle.

Question. Do the services use the OSD definition consistently or do they make up their own?

Navy answer. The Navy uses the SECDEF definition and makes every attempt to apply it consistently to a variety of information projects.

Air Force answer. In harmony with OSD Directives for Major Automated Information Systems, the Air Force uses DoD Directive 7920.1 and the definition it contains.

Army answer. Army has been following the basic principles of OSD LCM and is taking action to strengthen their implementation of it.

Question. If so, why does the Comptroller allow it?

Answer. The Services use the OSD definition.

Question. How many of the major AIS's have been reviewed and approved by the MAISRC?

Answer. The MAISRC has met 26 times to provide approval and guidance to 7 major AIS's:

Base Level Data Automation Program (Phase IV)

Air Force Logistics Command Modernization Program (AFLC)

Foreign Military Sales Financial Management Improvement Program (FFMIP)

Pay and Personnel Source Data System (SDS)

Tri-Service Medical Information System (TRIMIS)

DLA Modernization

Navy Laboratories Technical Office Automation Communications Systems (NALTOACS)

Question. What major AIS's are currently scheduled for MAISRC reviews in 1986?

Answer. The following AIS's are currently scheduled for review in FY 1986 (* indicates a review has been held by April 10, 1986):

Base Level Data Automation Program (Phase IV)

Air Force Logistics Command Modernization Program (AFLC)*

Foreign Military Sales Financial Management Improvement Program (FFMIP)*

Pay and Personnel Source Data System (SDS)*

Navy Laboratories Technical Office Automation Communications Systems (NALTOACS)

Tri-Service Medical Information System (TRIMIS)*

Naval Aviation Com. Mgt. Information System (NALCOMIS)

Tactical Army Combat Service Support Computer System (TACCS)

Command and Control Processing and Display System (R) Program (CCPDS)

Question. In 1987?

Answer. The schedule for FY 1987 MAISRC reviews is being developed. The list of major AIS's subject to review currently includes:

JOINT PROGRAMS

1. Tri-Service Medical Information System (TRIMIS) Program
2. Foreign Military Sales Financial Management Improvement Program (FFMIP)

ARMY

1. Army Standard Inform. Mgmt. Sys. (ASIMS/VIABLE/STARNET)
2. Tactical Army Combat Service Support Computer System (TACCS)
3. Supercomputing Capability
4. Continental Army MIS (CAMIS)
5. Corporate Data Base (CDB)
6. Unit Level Computer System (ULCS)
7. Commodity Command Standard System (CCSS)
8. Corps Theater ADP Service Center (CTASC)
9. Team UP (Test & Evaluation Analysis)

NAVY

1. Stock Point ADP Replacement Project (formerly USADPS-SP)
2. Navy Laboratories Technical Office for ADP and Communications Systems (NALTOACS)

3. Naval Aviation Command Management Information System (NALCOMIS)
4. Pay and Personnel Source Data System (PASS/SDS)
5. Personnel/Pay Project
6. Shipyard/Ordnance Eclectic System (SHORES) (formerly Shipyard ADPE Competitive Replacement Project)/Shipyard Modernization (SM)

AIR FORCE

1. Air Force Logistics Command Modernization Program
2. Base Information Systems Program (Phase IV)
3. Command and Control Processing & Display System (R) Program (CCPDS-R)
4. Personnel Concepts III
5. Automated Technical Order System (ATOS)

DLA

1. DLA Logistics Systems Modernization Program (formerly ADPER)

Question. Will the MAISRC's policy and standards enforcement role include a review of those existing policies and standards that have been outdated by new technology, changing applications, and future opportunities?

Answer. Yes, it is the role of the MAISRC to review such issues as they apply to specific programs. The MAISRC is not, per se, a policy advisory, or generic standards review, body. The generic review of existing DoD policy and standards to determine if it has become outdated is a function of the ASD(C).

Question. If so, how and when will this review be accomplished?

Answer. The generic review of policy and standards which may have been outdated by technology, etc., is an ongoing function performed by the OSD staff not the MAISRC.

Question. How does the MAISRC process treat each Service's ADP architecture?

Answer. To date, no program presented to the MAISRC has asserted any requirements which were based on a Service ADP architecture. When this does happen, we expect that the MAISRC will evaluate the reasonableness of the requirement, per se, in meeting the specified mission need, and in satisfying DoD policy.

Question. Does MAISRC accomplish formal "architecture reviews"?

Answer. No, the MAISRC may receive an information brief as background for a specific program review or set of program reviews, but it does not formally have the role of reviewing and approving Service ADP architectures. Nor is the MAISRC bound by Service ADP architectures.

Question. Does MAISRC validate or approve Service architectures?

Answer. The MAISRC would validate aspects of a specific program driven by a Service ADP architecture, if appropriate; or it might redirect the program, if the requirement stemming from a Service ADP architecture were deemed inappropriate.

Question. Why does OSD allow the Services to release requests-for-proposals to industry on major AIS's prior to MAISRC reviews?

Answer. Not all major AIS are selected for MAISRC review. Some are delegated to the DoD Component for life cycle management oversight. The Components are required by DoD policy to implement an oversight process which adheres to the principles of the DoD life cycle management policy. Accordingly, a Component may make the appropriate LCM decisions leading to release of an RFP without MAISRC review.

Question. In light of enhanced congressional concern about DoD's management of ADP resources, will this practice continue?

Answer. OSD plans to intensify its efforts, but some major systems will still be delegated to the Components.

Question. How many on-site systems reviews has the Comptroller's office made in the last five years?

Answer. Eight on-site reviews of major AIS's have been conducted since April 1981.

Question. What do you do with on-site review reports and their findings and recommendations?

Answer. The assessments are documented in reports of site reviews and also in our annual publication on IRM reviews. The reports are distributed to the OSD functional sponsors and are also distributed to the involved Defense Component(s). The reports are input to the MAISRC process for MAISRC systems and appropriate follow-up action requested of the Component(s).

Question. Have any management reviews or evaluation studies been conducted to determine the effectiveness of OSD's Information Resource Management program as established by DoD Directive 7740.1?

Answer. A total of 231 Information Resources Management Reviews were completed in Fiscal Years 1982, 1983, 1984, and 1985, covering all areas of information resources management, including ADP, reports and forms management, records management, telecommunications, privacy, copy management, and publications.

Question. If so, what were the findings?

Answer. 83 reviews were completed in Fiscal Year 1982, resulting in $40 million in cost avoidances (includes reports management, forms management, copy management, publications, and ADP).

52 reviews were completed in Fiscal Year 1983, resulting in a cost avoidance of $4.6 million (includes forms management, reports management, copy management, publications, and ADP).

46 reviews were completed in Fiscal Year 1984, resulting in a cost avoidance of $889,000 in the reports management, forms management, and publications areas.

50 reviews were completed in Fiscal Year 1985. $7.7 million in cost avoidances were realized due to the cancellation of 74 reports.

Question. How has the Comptroller clearly defined and implemented technical and functional procedures necessary to enforce life cycle management and control over automated information systems?

Answer. The definition and implementation of the life cycle management policy has been an ongoing process since the mid-seventies. A formal implementation program was established following publication of the basic policy in 1978. This program was completed in the following year.

The Assistant Secretary of Defense (Comptroller), formally tasked the DoDIG to carry out an audit of the implementation of the life cycle management policy. The DoDIG identified a number of areas requiring further clarification, and the OASD(C) staff took action to satisfy each recommendation. Subsequently, additional policy interpretation has been provided to the Components to aid in their implementation of the policy.

As indicated in my opening statement, we are currently engaged in further effort to strengthen the life cycle management policy and streamline the ADP acquisition process. While it may not be possible to solve every problem, we do see significant improvement over the last ten years and believe that improvement will continue, especially in view of the strong support of the Committee.

Question. What percent of the IRMS staff time is allocated to IRM policy development?

Answer. Approximately 30% of the staff time is spent on IRM policy development, policy reviews, and other policy related actions.

Question. To strategic ADP planning?

Answer. At the present time, it is about 5–10%, although it may expand as a result of the consolidation.

Question. To MAISRC reviews?

Answer. At the present time, approximately 30% of the time is spent on MAISRC reviews.

Question. To IRM and on-site reviews?

Answer. At the present time, approximately 15–20% of the time is spent on IRM and on-site reviews.

Question. To budget reviews and other major IRM issues?

Answer. At the present time, approximately 15–20% of the time is spent on budget reviews and other major IRM issues.

Question. What impact will the consolidation of all general purpose ADP programs, including those covered by the Warner Amendment, under the policy oversight of the Comptroller have on the IRMS directorate?

Answer. Clearly the consolidation will substantially increase the workload of the IRMS directorate to support the MAISRC reviews of the Warner amendment systems. Further, the actions to consolidate all the policies that are affected by the new alignment of responsibilities will also require a significant amount of staff time.

Question. Identify the policy directives, standards, and procedures developed and implemented by the IRMS directorate in 1984, 1985, and 1986.

Answer. The following were developed and implemented in 1984–1986:

DoD Instruction 7930.1, "Information Technology Users' Group Program," March 25, 1986.

DoD 7950.2–M, "Defense Automation Resources Management Manual," August 19, 1985.

DoD 7935.1–STD, "DoD Automated Data Systems Documentation Standards," April 24, 1984.

"DoD ADP Internal Control Guideline," November 1984. A reference to be used when developing and implementing internal control procedures within DoD computer operations.

Improvements to the information technology budget exhibits were included in DoD 7110.1-M, "DoD Budget Guidance Manual," in 1985 and 1986, to satisfy congressional requirements.

Question. Will the DoD Inspector General or the Comptroller's IRMS staff have primary responsibility for oversight of major AIS's?

Answer. The Assistant Secretary of Defense (Comptroller) has responsibility for oversight of major AIS's.

Question. Which organization will perform on-site reviews?

Answer. When on-site reviews are necessary for major AIS's, the Assistant Secretary of Defense (Comptroller) will perform them. However, this does not exclude the possibility of the ASD(C) asking the DoDIG to review specific programs for policy compliance related issues and report back to the ASD(C).

Question. How many are scheduled for 1986?

Answer. Three have been conducted so far in FY 1986.

Question. For 1987?

Answer. None are currently scheduled for FY 1987 but will be conducted if found to be needed.

Question. Does the DoD/IG have the necessary staffing and technical expertise to conduct on-site reviews of major AIS's on a regular and continuing basis? If so, please describe this capability.

Answer. The Inspector General, Department of Defense IG (DoD) audit staff does not have enough computer trained auditors to conduct effectively on-site reviews of major Automated Information System's (AIS's) on a regular and continuing basis. These reviews could require 100 additional auditors to be devoted to the Automatic Data Processing (ADP) audit function. Currently, we have 15 auditors with specialized ADP training who are dedicated full-time to ADP audits, and have provided some ADP training to the remainder of the staff. We also have an Automated Sytems Sampling Service division established within our Audit Planning, Resources and Reports Directorate.

However, within or current authorized strength of 533, we could not assign 100 auditors to evaluate major AIS without a concurrent reduction in our high priority efforts in audits of weapon systems, contractors, and of the procurement process.

Question. What is the view of the DoD/IG for assuming such a task?

Answer. The Inspector General would be willing to assume the task if manpower authorizations, travel, and training funds are sufficiently increased to allow us to perform this additional work.

Question. The Committee is disappointed with the sorry state of Army ADP. Have any on-site reviews been conducted for CAMIS?

Answer. No on-site reviews have yet been conducted for CAMIS. OSD had scheduled an on-site review for CAMIS in August 1985. However, at the CAMIS program manager's request, the on-site review was canceled, pending results of internal Army reassessment of CAMIS. The on-site review has not yet been rescheduled.

Question. Have any on-site reviews been conducted for VIABLE?

Answer. We received status reviews on VIABLE, but did not conduct an on-site review.

Question. Have any on-site reviews been conducted for VFDMIS?

Answer. No on-site reviews were conducted on VFDMIS.

Question. Have any on-site reviews been conducted for Project 80–X?

Answer. OSD has not conducted an on-site review of Project 80–X.

Question. Have any on-site reviews been conducted for TACCS?

Answer. No on-site review was conducted for TACCS.

Question. Are any planned, or can we expect business as usual?

Answer. We have plans to conduct reviews on CAMIS, VIABLE, Project 80–X, and TACCS. The types of reviews for these systems may differ depending on the situation. For example, we plan to conduct a MAISRC Milestone review of CAMIS, when the CAMIS program is restructured; on the other hand, we will be conducting a staff review on Project 80–X, following Army's reassessment of its acquisition activities. If an on-site review is deemed necessary in the course of preparing for the formal MAISRC review, we will then conduct an on-site review.

Question. Why were no reviews accomplished on these important systems?

Answer. TACCS was formally reviewed in January of 1986. In addition, we have had a number of staff level reviews of CAMIS and VFDMIS.

Question. Provide a list of automated information systems and their life cycle cost, for other than major AIS's

Navy answer. The Navy does not maintain a central list and life cycle costs of all automated information systems (AIS's) in the Department. However, a listing of the major AIS's and their life cycle costs is maintained. The information on those systems was provided in a previous response.

Air Force answer. The Air Force does not maintain information on all non-major AIS's at this headquarters.

Army answer. This information is not available at this time. The Army's inventory of automated information systems has become outdated and inaccurate. It also contained no cost data for local unique systems. The Army has a priority effort underway to correct the inventory, to include the addition of life-cycle costs. That information is expected to be available before the end of this calendar year.

Question. Name major AIS's or upgrades not scheduled for future MAISRC.

Answer. Major AIS's include upgrades which meet the criteria of MAISRC or Component level review at major milestones. Systems that have completed installation or that will not cost $100 million when installation is completed do not require this level of review, unless they are specifically selected as items of special interest. AIS's which have been delegated to the Components for an equivalent review include:

ARMY

1. Keystone (Old Request/Retain)

2.. Standard Depot System (SDS)
3. Corps of Engineers Automation Plan-1A
4. Army Civilian Personnel System (ACPERS)
5. Project 80—Phase II
6. Integrated Procurement System (IPS)
7. Army—WWMCCS Information System

NAVY

1. SNAP 2
2. Processing System (IDAFIPS) Project (formerly IDAFMS)
3. Standard Automated Financial System (STAFS)
4. Uniform Inventory Control Point (UICP) Resolicitation Project (formerly UADPS-ICP)
5. Stock Point Logistics Integrated Communications Environment (SPLICE)
6. Bases & Stations Information System

AIR FORCE

1. Air Force Capability Assessment Program (AFCAP)
2. Core Automated Maintenance System (CAMS)
3. Local On-Line Network System (LONS)
4. 1 ISG Modernization (Honeywell Replacement Program)
5. MAC Information Processing System
6. Strategic War Planning System
7. Air Force—WWMCCS Information System (AFWIS)

JCS

1. Modern Aids to Planning System (MAPS)

STRATEGIC PLANNING

Question. Has the information systems and technology planning process been integrated with the overall Planning, Programming, and Budgeting System (PPBS)?

Answer. The planning process has been integrated with the PPBS.

Question. If so, how?

Answer. Our primary strategic planning process within the Department of Defense is our Planning, Programming and Budgeting System (PPBS). The PPBS has a five year strategic planning cycle and a one year budgeting cycle. This is the central management process the Department uses to plan, program, and budget for all our Defense resources, including information systems. This permits component ADP initiatives to compete on their own mission merit for Defense resources. This competition takes place in the POM and Budget process. This also assures that a strong functional proponent exists and that ADP initiatives fit into the overall scheme developed by the functional mission area. Each year the Military Departments update their functionally oriented ADP systems plan. These plans are reviewed at the OSD level and, for the past two years, have been provided to OMB. These plans are also available to GSA for consolidation into the Federal Government Five Year ADP Plan.

Question. How does the information systems and technology planning process provide for the intricate time phase milestone planning required by DoD Directives 7920.1 (Life Cycle Management) and 5000.1 (Major Systems Acquisitions)?

Answer. Specific detailed program acquisition and development planning is normally not presented in components' strategic level plans. This is accomplished in the next tier of planning which addresses tactical level planning. Overall acquisition and life cycle management planning for specific programs is usually embedded in major command level plans and in program management plans specifically developed for each program.

Question. In the absence of a strategic ADP plan, how does the Comptroller review organizational ADP needs, set priorities, and authorize new technology initiatives, ensure linkages between information systems, and assess opportunities available from the application of new technologies?

Answer. Fundamentally, the Department believes that the vast majority of information systems and technology planning must be done within the components that have the missions and functions that must be supported by these systems. The basic policy guidance to meet the goals and avoid any of the problems you mentioned is contained in the Department's Information Resources Management Directive (DoDD 7740.1). In addition, my Directorate has put out planning guidance on modernization, software obsolescence, lease versus purchase and will continue to put out guidance on other areas in the future. The Department does not, nor should it, centrally review all of the planned automation initiatives of the services. This responsibility rests with the senior IRM official of the military services and is in accordance with the special DoD provisions of the Paperwork Reduction Act.

In addition, we have instituted the development of a formal ADP plan for systems supporting the Office of the Secretary of Defense. We expect our first OSD plan to be drafted by June 1986.

Question. Are OMB required budget exhibits 43A and 43B the principal documents used by the Comptroller to provide management oversight and control over DoD's general purpose ADP program?

Answer. No. There is no one principal document among the many sources used. In OSD we actively review the military components' five year plans and budget plans and make ongoing resource decisions based on these plans. My staff and the staffs of the other Assistant Secretaries review the component ADP systems plans to ensure they do comply with policies. In addition, when a specific program is reviewed in the Major Automated Information System Review Council compliance with policy is assessed. The budget exhibits 43A and 43B become just one of many inputs to the oversight process.

Question. Are budget exhibits the primary documentation required to support systems decisions?

Answer. No, but they are input to the process.

Question. If not, what other documentation is required and used by the Comptroller in the decision making process?

Answer. The documents input to the decision making process are dependent upon the nature of and tailored to the decision to be made. ADP budget exhibits, strategic plans, tactical plans, systems decision papers, economic analyses, mission element needs statements, program plans, program budget data and others make up the range of system documentation available to the Comptroller to support the decision making process.

Question. What specific ADP planning documents are required to support major systems prior to conversion from program guidance to appropriation funding?

Answer. This is accomplished at the component level and in general consists of functional plans and major command information systems plans which are input to the component Program Objectives Memorandum (POM) process. This may also include the Mission Element Needs Statement (MENS) depending on how early the system is in its life cycle.

Question. How does the budget review process that focuses on individual budget submissions from the military components get translated into a comprehensive and effective Information Resources Management Program?

Answer. This takes place through the Planning, Programming and Budgeting System which permits the competition of Information Technology program resource needs with other Defense programs. This permits senior managers to review the competing needs and based on priorities and needs statement, formulate an acceptable Information Technology program in context with all other Defense programs.

Question. How does the current review process ensure that the coordination of technologies and integration of systems across DoD organizational and functional boundaries required to support DoD's mission objectives take place?

Answer. The functional sponsor within OSD assures that systems are not functionally replicated and that integration requirements are stated as part of the functional needs. In general, coordination of technology is accomplished by the military services and through the OSD MAISRC review process.

Question. The Committee desires some additional budget information in order to facilitate further review by the General Accounting Office of the adequacy of DOD ADP management. Please provide the following information for the record by the Army, Navy, Air Force, Marine Corps, and the Defense Logistics Agency in fiscal years 1985, 1986, and 1987:

Breakout the 43A by major command.

Answer. The breakout of the 43A by major command is not consistent with the way the DoD Components (Army, Navy/Marine Corps, Air Force, Defense Logistic Agency, etc.) manage automatic data processing (ADP) systems. The life cycle management requirements for ADP are system oriented as is the Department of Defense review process. The planning and budget data are collected to coincide with those system rquirements. Consequently, data in the 43A exhibits are accumulated to reflect the total ADP requirements, by DoD Component, in accordance with OMB and DoD guidance.

Question. Within each command, breakout new initiative funding from that needed to maintain current systems.

Answer. The breakout of new initiative funding as well as 43A by major command is not consistent with the way the DoD Components (Army, Navy/Marine Corps, Air Force, Defense Logistic Agency, etc.) manage automatic data processing (ADP) systems. The exhibits reflect budgets which are based on total ADP requirements and are not itemized or differentiated between ongoing workload growth requirements and new initiatives. To provide this type of detailed information would require a complete reconstruction of the entire ADP budget process.

Question. Relate the new initiative funding by major command to that shown in exhibit 43B.

Answer. Since the life cycle management requirements for ADP are system oriented and the planning and budget data is collected to coincide with those system requirements, we cannot relate new initiative funding by major command to the 43B.

Question. Provide costs and explanations for new initiatives that are not addressed in the 43B.

Answer. The 43B identifies each planned acquisition of services and/or equipment that exceeds $1 million in the budget year or exceeds $8 million cumulative cost (for capital investment, rental, and commercial service cost category items of the 43A). Since this exhibit covers the period CY through BY+4, all information technology acquisitions (including initiatives) are included.

Software Obsolescence

Question. Why is software obsolescence a matter of growing concern to DoD?

Answer. DoD has many very large automated information systems. Most of these have been in existence for a number of years. Many were developed before the advent of structured programming, programmer support tools, data base management systems, and fourth generation languages. Because they were developed at a time when these current software tools were not available, these large systems are costly to maintain, and difficult to change in fundamental ways which may be needed to implement new more cost effective policy approaches.

Question. What is software obsolescence?

Answer. Software obsolescence describes a condition when our computer programs can no longer take advantage of the technical capabilities inherent in new computer equipment, become difficult and costly to maintain, and constrain our options for implementing management improvements. In the simplest terms, software is obsolete if it would be more cost effective to replace it, rather than to continue to use it. In practice, determining when or why software is obsolete, and how best to modernize can require a very complex analysis. Software may be obsolete for technical reasons which drive high maintenance cost, or for functional reasons which result in significant lost opportunity cost, e.g., the inability to adequately monitor weapon system parts reprocurement costs.

Question. How does software obsolescence manifest itself?

Answer. Software obsolescence manifests itself through increased proportions of programmer and analyst time being applied to maintenance rather than new development, through inability to accommodate policy changes, and through failure in mission performance.

Question. What is the impact of software obsolescence in terms of mission capabilities impairment and automated information systems operating cost?

Navy answer. Software obsolescence has a negative impact on the ability of information managers to get the information that is needed to make decisions that impact mission accomplishment. The present condition of the software denies Navy managers access to modern methodologies for processing accurate, timely, and reliable information. As software ages, the reliability of a system diminishes. Additionally, the availability of skilled automatic data processing (ADP) professionals to maintain the software, both civil service and private contractors, is reduced. Personnel resources tied up in maintaining antiquated systems deny Navy managers the benefits that accrue to any organization with the introduction of modern technology. This includes the interoperability, portability, and compatibility of standard data bases and systems. On the average, maintenance of software consumes 50 percent of the total computing cost. Further, obsolete software makes it much more difficult and costly to respond to changing requirements as standard Navy policy and procedures change.

Air Force answer: Software obsolescence is a performance indicator of the ability of software to respond to changing mission requirements. Since software is intended to provide flexibility, "ease of modification" is a desirable characteristic to minimize the obsolescence problem. Software maintenance or modification is easiest with higher order (e.g., fourth generation) languages and tools. Much of the existing software is coded in older languages and uses unstructured techniques. Experience indicates that software maintenance requires approximately 70–80 percent of the life cycle cost of software. The impact of the high maintenance level of effort is reflected by software development backlogs for changing requirements. As new hardware and software systems evolve, new third generation languages such as Ada and the transition to fourth generation languages and productivity tools will enhance maintenance. The result will be software which is more responsive to changing requirements.

Army answer. Obsolescent software limits the ability to add or modify mission capabilities, is very expensive to maintain, and cannot be integrated with new hardware/software technology.

Question. How does DoD Directive 7920.1 address the software obsolescence issue?

Answer. The fundamental purpose of the life cycle management policy, articulated in DoD Directive 7920.1, is to provide an effective management process for automated information system modernization.

The heads of the DoD Components are specifically charged by DoD Directive 7920.1 to "Ensure that functional, ADP, and Telecommunications plans are developed and maintanied to reflect objectives, projected functional requirements, anticipated operating environments, and obsolescence conditions."

The policy also requires that "Each operational AIS shall be reevaluated on a periodic basis to assure that the AIS continues to operate efficiently and to meet functional requirements in a cost effective manner."

Question. Who is responsible for enforcing the implementation of the directive as it applies to the software obsolescence issue?

Answer. The Assistant Secretary of Defense (Comptroller) is responsible for DoD-wide oversight of the implementation of the life cycle management policy. The head of each DoD Component is responsible for insuring that the policy is implemented within his Component. The senior information resource management official in each Component is responsible for enforcement within the Component.

Question. What is the status of the draft policy on improving software management throughout the DoD, as was alluded to in last year's testimony?

Answer. The updated policy referred to in my testimony last year was to be published jointly by ASD(C) and DUSDR&E(R&AT). A draft was provided to DUSDR&E(R&AT) last fall. DUSDR&E(R&AT) was to formally coordinate the policy for publication.

Instead, a decision was made to incorporate software policy in a draft of DoD Directive 5000.29, "Management of Computer Resources in Major Defense Systems," for which DUSDR&E(R&AT) is the sole proponent. This policy is in informal coordination, but has been delayed due to difficulty in obtaining department-wide consensus.

Since the policy and program management oversight for mission critical systems (less embedded computers) has been transferred to ASD(C), the new policy will be reintroduced for formal coordination by OASD(C) this spring.

Question. When will the policy be approved?

Answer. A formal coordination normally takes 120 days or more.

Question. Who will enforce implementation once it is approved?

Answer. ASD(C) will have the overall policy oversight responsibility, however specific responsibilities will be spelled out for each of the Components. These responsibilities will be implemented through the life cycle management process, and through designated waiver authorities.

Question. What role will the MAISRC have in its enforcement?

Answer. The MAISRC enforces adherence of specific programs to DoD policy and standards.

Question. Does DoD have underway or planned any effort to identify the extent of technical and functional software obsolescence that exists throughout DoD?

Answer. Yes, last year the Committee requested that DoD study the extent of software obsolescence within the Department. We are establishing a task to develop criteria for evaluating software obsolescence. We will prototype these criteria in a representative sample of DoD software applications, and we then plan to formulate an ongoing software modernization program using the criteria as a consistent base for planning and evaluation.

Question. When is it expected to be completed and what will it cost?

Answer. We expect that it will cost approximately $1 million, and will be completed by January 1988.

Question. What are the management tools that have been developed to assist DoD and its components in identifying software obsolescence, determining the magnitude of the problem, and developing a plan to resolve it?

Answer. We have not begun to develop a specific set of criteria or tools for identifying software obsolescence. GSA has published guidelines which are applicable to management of software obsolescence at the level of an individual installation. There are commercial software products which can be used to analyze software quality, adherence to standards, etc. We understand our charge from the Committee to transform such guidance and capabilities into a uniform DoD-wide management approach.

Question. Have these tools been made available to the DoD components?

Answer. No specific set of evaluation criteria or tools have been specified for DoD-wide use. However, this is the purpose of the initiative we have recently undertaken.

Question. Who is responsible for assuring the proper use of these tools throughout DoD?

Answer. The Assistant Secretary of Defense (Comptroller) is responsible for implementing the Committee's guidance to develop a management system for evaluating software obsolescence and overseeing needed modernization efforts. All operating elements of the DoD ADP management infrastructure will be responsible for assuring proper use of any tools which may be specified in support of this program.

Question. Is old software capable of providing the security required by the services' increasing use of multiuser systems?

Navy answer. No, as a rule old software does not provide the security mandated by the Navy. It is neither economically nor operationally feasible to retrofit obsolescent software to accommodate the security required by the services. Trying to retrofit old software decreases the operating capacity of the affected systems and uses funds in a budget constrained environment that could be applied to a more comprehensive effort to upgrade software. For these reasons, security required by the services should be introduced early in the life cycle of any system.

Air Force answer. Each software system must be evaluated on a case by case basis. Because past systems were acquired without computer security in mind, many systems do not have the software mechanisms to assure security. Common security capabilities have been available in the past (e.g., auditing, password/user id), but many of the more sophisticated security capabilities were not available. As new systems are acquired computer security capabilities are required based on the risk associated with the individual system.

Army answer. Our new systems attempt to use existing software to the maximum extent to reduce development costs of new software systems. However, as such systems become mulit-user, there is a need to re-examine the software from a security standpoint.

Question. Are the services top level management providing the support needed to resolve the software obsolescence problem?

Navy answer. Yes, the overall thrust and direction given by management is to improve the capabilities of decision makers to respond to mission requirements through access to accurate, reliable and timely information processed by modern and efficient software systems. The Navy strategic plan for information systems focuses on the need to improve information management with modern technologies and systems. Several indefinite delivery contracts have been awarded including joint service efforts that provide system developers and users with access to modern hard-ware and system software configurations. Additionally, the Navy's effort to share quality standard software reduces the need for maintaining obsolescent software across commands and service components.

Air Force answer. The Air Force top level management is committed to supporting efforts which address the software obsolescence problem. Indicators of that support are the Headquarters Air Force, Assistant Vice Chief of Staff directed (1 Sep 84) Air Force Management Advisory Group (AFMAG) report on Data Systems Management and Manpower Impacts; the revised 700-series Air Force regulations for the Management of Systems for Command, Control, Communications, and Computers; and other similiar initiatives. The AFMAG report, for example, specifically identified software productivity initiatives which will help address the obsolescence problem. The intent of the AFMAG and related initiatives is to improve programmer productivity for software development and maintenance as well as the productivity of the end user.

Army answer. Yes. All aspects of systems obsolescence are of great concern to top Army leadership.

Question. To what extent have Navy automated information systems been evaluated against the criteria in NAVDAC advisory bulletin number six, dated April 4, 1984, entitled "Recognizing Obsolescence."

Answer. The bulletin has been distributed. Each activity is responsible for evaluating their systems against the criteria.

REQUIREMENTS CONTRACTS

Question. The Defense Department has recently expanded the use of requirements contracts for the purchase of ADP equipment, especially mini and micro computers. For example, the Air Force recently awarded the Air Force Minicomputer Multi-User System (AMMUS) contract for $480 million for 1,600 general purpose minicomputers. While the Committee endorses central ADP procurements such as this, that achieve great price savings and foster standardization within each Service, the Committee is not convinced that they receive sufficient management attention with the Department.

Name all the large ADP requirements contracts that are active, showing the type of equipment bought, the total estimated cost of the contract, the appropriations in which funded, the amount of funding needed by appropriation in each fiscal year 1985/1986/1987, the Service split if applicable, and the Service which is responsible for the contract.

DLA answer. The information requested follows:

Contract	No. F19630-86-D-002	DLAH00-84-0-0246	DLAH00-85-P-005.
Contractor	Zenith Data Sys	Federal Comp Corp	Falcon Sys Inc.
Award date	14 Feb 86	30 Apr 84	31 Jul 85.

Total est. cost	242,876,450	25,435,578	115,156,519.
Appropriation	O&M	O&M/PDA	O&M/PDA.
DLA FY funding:			
FY 85		$6.0M (O&M) $1.6M (PDA)	$.09M (O&M). $37.8M (PDA).
FY 86	11.2 (O&M)	$10.6M (O&M) $1.9M (PDA)	$6.5M (O&M)
FY 87	4.0 (O&M)	$5.6M (O&M) $3.8M (PDA)	$8.4M (O&M).
Contract duration	3	8	5.
Service split: Army, AF, Navy	28%		
DLA	16%	100%	100%.
Equipment purchase	General purpose stand alone workstations, peripherals, software maintenance and spare parts.	Terminals, printers control units and keyboard display.	Central processing units (Gould 9050's) terminals, printers, direct access storage devices, magnetic tape device and I/O Processors.

Navy answer.
Name: Super Minicomputer Contract.
Equipment: PE 3210 minicomputer.
Cost: $61,000,000.
Split: Navy 100%.
Service Responsible: Navy.
Name: Tempest Microcomputer Contract.
Equipment: Z150 microcomputer.
Cost: $100,000,000.
Split: Navy 50%/Air Force 50%.
Service Responsible: Navy.
Name: Portable Microcomputer Contract.
Equipment: Televideo XL microcomputer.
Cost: $24,000,000.
Split: Navy 50%/Air Force 50%.
Service Responsible: Navy.
Name: Desktop Follow-on Microcomputer Contract.
Equipment: Z-248 microcomputer.
Cost: $242,000,000.
Split: Navy 28%/Air Force 28%/Army 28%/Defense 16%.
Service Responsible: Air Force.

The above contracts are not funded in a specific appropriation. If the equipment needs for a particular system are satisfied by use of a requirements contract, the funding is budgeted as part of the system.

Air Force answer. The following large ADP requirements contracts are currently active:

Contract name	Type equipment	Estimated value
Tempest Small Computer Requirements Contracts	Zenith Z-150 Microcomputers	$345M.
Small Computer Requirements Contract-Follow On	Zenith Z-248 Microcomputers	$345M.
Air Force Minicomputer Multi-User (AMMUS) (not a requirements contract).	Wang VS-85 and VS-100 minicomputers	$480M.
Small Computer Requirements Contract (not available for systems since award of Small Computer Requirements Contract-Follow On).	Zenith Z-120	$199M.

These standard contracts are acquisition vehicles only. Therefore, funding information appears under the individual programs which use these contracts as sources of hardware and software.

The split for the TEMPEST contract is approximately fifty-fifty for the Air Force and the Navy.

The split for the Small Computer Requirements Contract-Follow-On is about 20% for OSD and DOD agencies with the remaining 80% being split roughly equally among the major Services.

The Navy will obtain 28 systems from the AMMUS contract with the remainder going to the Air Force.

The Air Force is responsible for each of the above contracts.

Army answer. The Army has two (2) large ADP requirements contracts that are currently active:

	DAHC26-85-D-0005	DAHC26-85-D-0006
Type of equipment bought	Multi-User Micro Computer	Single User Micro-Computer.
Total estimated cost of contract (at award).	$67,837,538.00	$6,700,000.00.
The appropriation in which funded	OMA/OPA (Depending on configuration)	OMA/OPA (Depending on configuration).
The amount of funding:		
FY85	$137,080,622.00	$144,796,903.00.
FY86	[1]	[1]
FY87	[1]	[1]
Service split	N/A	N/A.
Responsible service	Army	Army.

[1] Orders will depend on local requirement and funds availability. The Army has already met its' minimum buy.

Question. Name the ones that are planned by the end of fiscal year 1987 and provide a similar breakout as above.

DLA answer. The information requested follows:

Requirement	Lap held computer	Disk drives
Total Est. Cost	$17,200,000–$21,500,000	$13,065,000.
Appropriation	O&M	O&M/PDA.
Contract Duration	3	2.
Contract Award	FY 87	FY 86.
DLA FY Funding:		
FY 86		$.5M (O&M). $5.2M (PDA).
FY 87	$4.2 (O&M)	$.5M (O&M). $6.8M (PDA).
Responsibility:		
Contracting	Air Force	DLA.
Technical	Navy	
Equipment Purchased	Portable, battery operated laptops microcomputer.	High-Speed Disk Drives.

Navy answer.
Name: Lap Top Microcomputer Contract.
Equipment: Lap top microcomputers.
Cost: $120,000,000.
Split: All DOD.
Service Responsible: Navy/Air Force.
Name: Multiuser Small Computer Contract.
Equipment: Multiuser small computers.
Cost: $3,200,000,000.

Split: All DOD.

Service Responsible: Air Force.

The above contracts are not funded in a specific appropriation. If the equipment needs for a particular system are satisfied by use of a requirements contract, the funding is budgeted as part of the system.

Air Force answer. The additional standard requirements contracts planned for award by the end of fiscal year 1987 are as follows:

Contract name	Type equipment	Estimated value
Lap Held Small Computer Requirements Contracts.	Lap Held Microcomputers	$30M.
Multi-user Small Computer Requirements Contract.	Multi-user Microcomputers	No estimate available.

We anticipate a roughly even split among the three major Services. OSD and DOD agencies will also be able to buy from these contracts, but their requirements represent a small percentage of the total. Air Force will do the contracting for these two contracts.

Army answer. The Army currently has three (3) Request for Proposals (RFPs).

	DAHC26-85 R-0001	DAHC26-85 R-0002	DAH26-85 R-0008
Type of Equipment to be bought.	Mini Computer	Logmars (T) Bar Coding, Reading Marking Equipment/TOE.	Portable Microcomputer, Unit Level Computer TOE/TDA.
Total Estimated Cost of Contract.	No minimum	Guaranteed minimum of $10.0 million.	Guaranteed minimum of $5.2 million.
The Appropriation in which funded.	OPA	O&M/OPA	O&M/OPA.
The estimated amount of funding for:			
FY86	([1])	([1])	([1]).
FY87	([1])	([1])	([1]).
FY88	([1])	([1])	([1]).
Service Split	N/A	N/A	Army/Navy/AF/DLA.
Responsible Service:	Army	Army	Army.

[1] Contracts have not been awarded to date. Orders will depend on local requirements and funds availability.

Army answer. There is no way to relate these to the 43 exhibits. Data for these exhibits are developed by system, item, or project and expense category. Contract data is not collected.

DLA answer. The requirement for the Zenith Data System, Federal Computer Corp, Falcon System, the Lap Held Computers, and Disk Drives are reflected in the Exhibit 43A and the respective Exhibit 43A-1 which applies. The actual fiscal year cost for the contracts are reflected in question 1 and 2.

Navy answer. If equipment requirements for a particular system are satisfied by using one of the requirements contracts, the costs are identified as part of the system. The Navy does not separately track which systems are using equipment from the requirements contracts. Therefore, the funds used to procure ADPE from requirements contracts are included in the ADP budget, but may not be directly relatable to the budget exhibits.

Air Force answer. These contracts cannot be related directly to the budget exhibits submitted, since the budget exhibits generally are broken out of in terms of programs and systems. Certain of the programs and systems included in the budget exhibits provided to Congress will use these contracts as vehicles for obtaining hardware and software.

Question. Mr. Springett, how many of these contracts in your opinion qualify as major automated information systems?

Answer. None of these contracts qualify as major automated information systems. These are contractual vehicles which are in place, ready to use, to assist developers. Funding is not identified for these contracts, but rather for the systems which use these contracts to satisfy requirements. These systems, rather than the hardware vehicles, are subject to life-cycle management.

Question. Are each of these requirements contracts subject to life cycle management?

DLA answer. Yes, each service/agency utilizing these contracts will employ life cycle management principles in the employment of the associated deliverable resources.

Navy answer. The requirements contracts themselves are not subject to life cycle management, but the systems which use them are. Economic analyses are performed not for the contract themselves, but for the systems and projects which use them.

Air Force answer. Individual programs which use these contractual vehicles as a source of hardware or software are subject to life cycle management.

Question. Show the milestones for each system.

DLA answer. The milestones for the contracts are as follows:

Milestone	Lap held computer	Disk drives
Issuance of RFP	June 1986	December 1985.
Completion of Evaluation	October 1986	February 1986.
Complete Negotiations	October 1986	April 1986.
Contract Award	November 1986	June 1986.

Navy answer. The milestones for the contracts are as follows:
Name: Supermini.
Milestones—Award March 1984.
Name: Tempest Microcomputer Contract.
Milestones—Award October 1984.
Name: Portable Microcomputer Contract.
Milestones—Award May 1985.
Name: Desktop Follow-on Microcomputer Contract.
Milestones—Award February 1986.
Name: Lap Top Microcomputer Contract.
Milestones—Projected Award November 1986.
Name: Multiuser Small Computer Contract.
Milestones—Projected Award February 1987.

Air Force answer. The milestones for the contracts are as follows:

Name and Award Date:

Tempest Small Computer Requirements Contract, October 1984.

Small Computer Requirements Contract-Follow-on, February 1986.

Air Force Minicomputer Multi-User (AMMUS), January 1986.

Small Computer Requirements Contract, October 1983.

Army answer. A milestone 1/General Officer IPR for LOGMARS (Tactical) was held 17 Feb 1984. At that time it was decided that the acquisition would be for nondevelopmental items. Milestone 3 scheduled for June will be held to: type classify specifications as standard; proceed with contract award scheduled for July 1986 with full production authorization; and insure that configuration, 1st article, hardware, software acceptance testing takes place and operational testing requirements have been satisfied.

On 30 January 1986, the Chief of Staff, Army provided guidance concerning the locations that the Portable Microcomputer (ULC) systems will be fielded to support the ULLS and TAMMIS-D applications. This had an impact on the documentation for the program. The Required Operational Capabilities, Operation & Organization, Basis of Issue Plan, Economic Analysis, and Life Cycle Cost Estimates are expected to be finalized in the July 1986 timeframe.

Question. Show the life cycle cost for each system.

DLA answer. The life cycle cost for the various contracts is outlined in questions 1 and 2.

Navy Answer:
Life Cycle Cost—$61,000,000—Supermini.
Life Cycle Cost—$100,000,000—Tempest.
Life Cycle Cost—$24,000,000—Portable.
Life Cycle Cost—$242,000,000—Desktop.
Life Cycle Cost—$120,000,000—Laptop.
Life Cycle Cost—$3,200,000,000—Multiuser.

Air Force answer.

Contract Name	Type Equipment	Estimated Value
TEMPEST Small Computer Requirements Contracts	Zenith Z-150 Microcomputers	$345M.
Small Computer Requirements Contract-Follow On	Zenith Z-248 Microcomputers	$345M.
Air Force Minicomputer Multi-User (AMMUS) (not a requirements contract).	Wang VS-85 and VS-100 minicomputers	$480M.
Small Computer Requirements Contract (not available for systems since award of Small Computer Requirements Contract-Follow On).	Zenith Z-120	$199M.
Lap Held Small Computer Requirements Contracts	Lap Held Microcomputers	$30M.
Multi-user Small Computer Requirements Contract	Multi-user Microcomputers	No estimate available.

Army answer. The Life Cycle Cost Estimate for the TOE TAMMIS-D and ULLS ULC applications is being reworked. The Life Cycle Cost Estimate for LOGMARS in Constant FY86 dollars ranges from a low of $401.5 million to a high of $877.6 million with the most likely cost to be $719.4 million.

Question. Show whether an economic analysis has been performed on each system.

DLA answer. Economic analyses are not performed on requirement acquisitions contracts, however they are prepared the automated information systems that utilize the equipment ordered from these requirement contracts.

Navy answer. Economic analyses are performed not for the contract themselves, but for the systems and projects which use them.

Air Force answer. Economic analyses are performed as required by Air Force regulations for programs which use these contractual vehicles as a source of hardware or software.

Army answer. The Economic Analysis for the Portable Microcomputer (ULC) is being revised and should be finalized in the July 1986 timeframe.

An Automation Economic Analysis was prepared for LOGMARS (Tactical) in January 1984 and revised in September 1985.

Army answer. The LOGMARS (Tactical) program, RFP (DAHC26-85-R-0002), and the Portable Microcomputer (ULC) program, RFP (DAHC26-85-R-0008), are subject to Life Cycle Management.

Question. Why were AMMUS, WIMS, and SIMS not identified in Air Force exhibits 43A and 43B to Congress?

Answer. A funding profile and description for AMMUS was not included since AMMUS is only a contractual vehicle—not a program—available to Air Force programs that have validated requirements for minicomputer systems. Programs participating in AMMUS (e.g., WIMS and SIMS) will fund their own purchases from the contract, and therefore, will be included in the 43A and 43B exhibits.

Although they are not individually identified, the funding profiles for WIMS and SIMS are included in the 43A and in the 43A-1 exhibit entitled "Base Information Systems Program (Phase IV)". However, due to oversight, the WIMS and SIMS narrative statements were not included in the 43B. This oversight will be corrected in the FY88 submission.

Question. Concerning the AMMUS contract, what is the justification for acquiring 500 general purpose minicomputer systems for the major command and base level civil engineering/services functions?

Answer. Justification for acquiring these minicomputer systems is based on projected efficiency gains resulting from their implementation. For example, the systems under the WIMS and SIMS will improve the productivity of Air Force personnel; improve service responsiveness; reduce the potential for fraud, waste, and abuse; and reduce operational costs.

The "500" is incorrect. Presently, the total number of systems planned to be procured from the contract is 426. This includes 260 systems for WIMS and SIMS, 125 for the Air Force Base Contracting Automated System, 12 for the Air Force Commissary Service, 1 for the Air Force Computer Acquisition Center, and 28 for the Navy.

Question. Was a formal requirements analysis performed for these 500 systems? If so, submit it for the record.

Answer. A requirements study was accomplished for all systems to be procured for the command and base level civil engineering/services functions.

[Clerk's note.—The required documents were submitted and are on file with the Committee.]

Question. Who performed the analysis?

Answer. The analysis was performed by the Air Force Engineering and Services Center.

Question. Concerning the AMMUS contract, what is the justification for acquiring 1,100 additional microcomputer systems?

Answer. AMMUS is an Indefinite Delivery/Indefinite Quantity contract and not a requirements contract. The guaranteed minimum buy is provided by purchases for the WIMS and SIMS. Purchasing the remaining minicomputer systems is the option of the Air Force. Firm Air Force requirements for the estimated 1,100 systems, beyond the presently identified five Air Force programs, have not yet been established. However, additional programs are in review for participation, now. As these additional programs mature, their validated requirements will be justification for purchasing portions of the remaining 1,100 systems.

The Air Force's total number of minicomputer systems requested in the Delegation of Procurement Authority was based on both firm and projected (estimated) requirements, and this was explained in the Agency Procurement Request to GSA, March 1984. The projected requirement was an estimate based on sample surveys and a review of program candidates for using a standard minicomputer contract.

Question. How will these systems be used?

Answer. The use of the addtiional systems will be determined in the future by each Air Force program that validates a requirement to purchase from the AMMUS contract.

Question. Was a formal requirement analysis performed for these 1,100 systems. If so, submit it for the record.

Answer. There is no formal requirements analysis for these additional systems because one is not required at this time. A formal requirement analysis for portions of the remaining systems will be done by each future Air Force program that validates its need to purchase from the AMMUS contract.

Question. Who performed the analysis?

Answer. There is no formal requirements analysis for these additional systems because one is not required at this time.

Question. The Committee understands that GSA reduced the number of systems authorized upder AMMUS from 2,500 to 1,600 systems. What data processing needs will not be satisfied as a result of this reduction?

Answer. At this time, all Air Force requirements for the AMMUS contract will likely be met within the 1,600 systems authorized by GSA. The Air Force's request for 2,500 systems was based on both firm and future estimated requirements, as stated in the Agency Procurement Request sent to GSA, March 1984. The estimates were based on the best information available two years ago.

Question. Proponents for both Phase IV and AMMUS programs disagree on the ability of Phase IV to assume the AMMUS data processing work loads. Has the Air Force conducted an independent study of the functions to be supported by the AMMUS program in comparison to the capabilities of the Phase IV system?

Answer. Yes, the Air Force did conduct an independent study of the functions supported by the AMMUS program in comparison to the capabilities of the Phase IV system. This was a joint performance evaluation by the Air Force Data Systems Design Center and the Air Force Engineering and Services Center in November 1983. The results showed that the System 80 on the Phase IV Sperry Univac contract was significantly deficient for implementing the engineering and services programs.

Question. Has an economic analysis been done on the decision to use AMMUS rather than Phase IV?

Answer. An economic analysis has been accomplished in support of implementing the AMMUS contract.

Question. What did it show?

Answer. Total benefits were estimated at $31M per year for implementing WIMS, and between $3M and $6M annually for SIMS. The analysis did not discuss the economics of using the Phase IV contract since the performance evaluation found that the Phase IV contract was technically too deficient to use in lieu of AMMUS.

Question. The Committee understands that the Air Force did not validate the need for and grant final approval for AMMUS until November, 1984. Yet it requested authority from GSA to purchase AMMUS ADP equipment in March, 1984. Why is this sequence of events acceptable to you, Mr. Springett?

Answer. The sequence is acceptable because the need for AMMUS was established and validated well in advance of the Delegation of Procurement Authority (DPA). The Air Force's request for a DPA in March 1984 was preceded by the supporting requirements study (1982), feasibility study (1983), economics analysis (1983), and performance evaluation of currently installed equipment (1983). Formal HQ USAF approval of AMMUS followed much later as the result of a lengthy coordination effort between three Air Force Commands. The time was necessary to establish the details of multi-command interfacings for implemeting AMMUS.

Question. Do DoD procurement regulations provide for obtaining a delegation for procurement authority from GSA prior to formally approving an ADP acquisition program?

Answer. The DoD procurement regulations require a delegation procurement authority before contracting actions but not before validation and approval of the requirement.

CENTRAL DESIGN ACTIVITIES

Question. Central Design Activities are organizations which manage ADP operations and system upgrades.

Mr. Springett, does the Department have a standard definition for central design agencies?

Answer. No, the Department does not have a standard definition for central design activities, (CDAs).

Question. If not, why not?

Answer. The Department recognizes the concept of Central Design Activities (CDAs). The Department had a standard definition for central design activities which was used to collect costs of the CDAs up until 1980 (Fiscal Year 1982 budget). A central design activity was defined as a DOD Component designated organization (or segment thereof) which, as a minimum, is responsible for: (a) Designing, coding, testing, documenting, and subsequently maintaining/modifying computer operating or applications software for standard use (without substantive alteration) by more than one data processing installation; (b) Creating, reproducing, disseminating/transmitting the above computer software and documentation for each authorized release of the computer software to two or more data processing installations; and (c) Providing technical assistance and corrective programming action on computer software trouble calls from data processing installations utilizing the above standard computer software. Separate reporting of CDA data was eliminated as part of the paperwork reduction initiative in July 1981 (Fiscal Year 1983 ADP budget).

Question. Do the services use a DOD standard definition? If not, provide each service's definition and compare them.

Navy answer. Consistent with the Department of Defense (DOD) standard definition, the Navy defines a central design activity (CDA) as an organization responsible for the development of standard software systems for use by multiple activities. These standard systems support the CDAs functional area of responsibility.

Air Force answer. The Services do not use a DOD standard definition for the term "Central Design Activity." In the Air Force a central design activity is one which at some central location develops software which is subsequently installed at most or all bases across the Air Force.

Army answer. The Army defines Central Design Activities (CDAs) as orgnaizations that design, develop, test, install, and subsequently maintain/modify automated information systems.

Question. Name each CDA. Show its service and major command affiliation, provide its funding profile for each fiscal year 1985 to 1987 by appropriation, and provide its number of military and civilian personnel separately for the same period.

Navy answer. There are eight activities that generally meet the criteria for a CDA. They are:

Navy Fleet Material Support Office. The major command affiliation is the Naval Supply Systems Command.

Naval Military Personnel Command. The major command affiliation is the Naval Military Personnel Command.

Navy Comptroller Standard Systems Activity. The major command affiliation is the Comptroller of the Navy.

Naval Sea Systems Command Automated Data Systems Activity. The major command affiliation is the Naval Sea Systems Command.

Naval Aviation Logistics Center. The major command affiliation is the Naval Air Systems Command.

Facilities Systems Office. The major command affiliation is the Naval Facilities Engineering Command.

Management Information and Instructional Systems Activity. The major command affiliation is the Chief of Naval Education and Training.

Navy Management Systems Software Support Organization. The major command affiliation is the Naval Space and Warfare Systems Command.

Although funding for the CDAs is included in the overall Navy information technology budget development and review process, the Navy does not currently require that CDA data be separately identified. The separate reporting of CDA data was eliminated several years ago consistent with the requirements of the paperwork reduction initiative. Therefore, the information to support the requested funding and personnel profiles is not available. If the committee desires the separate identification of funding and personnel profiles by CDAs, a special budget call will be conducted. The results will be forwarded to the committee.

Marine Corps answer. The U.S. Marine Corps has three central design activities which are located at the following sites; Albany, Georgia; Kansas City, Missouri; and Quantico, Virginia. All of the central design activities report operationally to the Director, Command, Control, Communications and Computer (C4) Systems Division at Headquarters Marine Corps.

FUNDING PROFILE

[In thousands of dollars]

Activity	Fiscal year—		1987
	1985	1986	
Albany:			
PMC	1,412	670	4,332
O&MMC	3,665	4,428	4,631
MPMC	3,771	3,929	3,965
Kansas City:			
PMC	833	4,820	1,350
O&MMC	6,632	6,768	6,979
MPMC	4,296	4,475	4,516
Quantico:			
PMC	1,657	5,853	6,065
O&MMC	5,443	4,748	4,996
MPMC	3,172	3,304	3,335
Albany:			
Civilian End Strength	106	110	110
Military End Strength	151	151	151
Kansas City:			
Civilian End Strength	162	163	158
Military End Strength	172	172	172
Quantico:			
Civilian End Strength	88	88	88
Military End Strength	127	127	127

Air Force answer. The Air Force has two major Central Design activities: The Air Force Standard Information System Center (SISC) and the Air Force Manpower and Personnel Center (AFMPC). The funding profile for both activities follows:

DEPARTMENT OF THE AIR FORCE INFORMATION TECHNOLOGY PROGRAM, FY 87 PRESIDENT'S BUDGET—CENTRAL DESIGN ACTIVITIES

[Dollars in thousands—Strength in whole numbers]

	Fiscal year—		
	1985	1986	1987
CDA: Standard Information System Center			
Capital investment	$6,091	$91,241	$93,883
Personnel:			
Salaries	$24,414	$25,191	$25,702
End strength:			
Military	559	568	568
Civilian	301	300	300
Equipment, space, and other	$10,265	$2,730	$3,045
Commercial services	$35,138	$23,349	$24,149
Interagency services			
Intra-agency services			
Other services			
Total obligations	$75,908	$60,511	$146,779
Appropriations:			
3080 Other procurement	5,673	8,279	72,358
3400 Operations and maintenance (Air Force)	54,089	35,222	57,109
3500 Military personnel (Air Force)	16,146	17,010	17,312

DEPARTMENT OF THE AIR FORCE INFORMATION TECHNOLOGY PROGRAM FY87 PRESIDENT'S BUDGET—CENTRAL DESIGN ACTIVITIES

[Dollars in thousands—Strength in whole numbers]

	Fiscal year—		
	1985	1986	1987
CDA: AF Manpower and Personnal Center			
Capital investment	$16,345	$7,304	$13,546
Personnel:			
Salaries	$14,956	$15,442	$15,652
End strength:			
Military	397	397	397
Civilian	127	127	127
Equipment, space, and other	$6,575	$749	$469
Commercial services	$7,277	$13,000	$11,333
Interagency services			
Intra-agency services	−$294	−$294	−$294
Other services			
Total obligations	$44,859	$36,201	$40,706
Appropriations:			
3080 Other procurement	5,200	5,296	10,196
3000 Military construction	7,900		
3400 Operations and maintenance (Air Force)	20,292	18,921	18,410
3500 Military personnel (Air Force)	11,467	11,984	12,100

Army answer. The Army has one designated Central Design Activity for Army-wide standard systems, the US Army Information Systems Engineering Command (USAISEC). USAISEC is a subordinate activity of the US Army Information Systems Command (USAISC). In addition, the Automated Logistics Mnagement Systems Activity and the Logistics System Support Activity, subordinate activities of the US Army Materiel Command, the Health Care Systems Support Activity, subordinate activity of the US Army Health Services Command and the Engineer Automation Support Activity, subordinate activity of the US Army Corps of Engineers support the major command-unique requirements.

U.S. ARMY INFORMATION TECHNOLOGY SYSTEMS CENTRAL DESIGN ACTIVITIES

[Dollars in millions]

	Fiscal year 1985	Projected fiscal year	
		1986	1987
Information Systems Engineering Command:			
Operation and maintenance, Army	$94.4	$113.1	$123.4
Military end strength	494	514	528
Civilian work-years	1,355	1,277	1,291
Automated Logistics Management Systems Activity:			
Operation and maintenance, Army	$27.4	$28.0	$23.3
Military end strength	8	8	7
Civilian work-years	618	619	619
Logistics System Support Activity:			
Operation and maintenance, Army	$20.7	$26.1	$16.8
Military end strength	0	0	0
Civilian work-years	397	395	396
Health Care Systems Support Activity:			
Operation and maintenance, Army	$6.7	$6.0	$5.4
Military end strength	22	23	23
Civilian work-years	91	93	99
Engineer Automation Support Activity:			
Operation and maintenance, Army	$1.5	$1.3	$1.3
General expense [1]	4.0	4.0	4.0
Military end strength	0	0	0
Civilian work-years	81	86	77

[1] General expense is not an Army appropriation

Question. What reviews has the department made to show the effectiveness and efficiency of its CDAs?

Navy answer. The Navy reviews the effectiveness and efficiency of Navy commands including the CDAs in the management of information systems:

Navy had developed, published, and updated a strategic plan for information systems that ties the need for standard information systems to the organization's mission.

An annual planning session is conducted to promote compliance from functional and command echelons with the Navy's strategic plan for information systems. In this forum, the information requirements and systems produced by the CDAs are reviewed to identify potentially duplicative development efforts and to integrate the standard systems across the commands and their CDAs.

System development approvals and budget reviews subject development effort across CDAs to constant scrutiny.

Navy Inspector General and Navy audit teams emphasize information systems management during the course of their normal reviews. Echelon two command Inspector Generals exercise oversight as part of their regular inspections of field activities.

Navy quality assurance policy established procedures for information system project review, testing, and evaluation by an independent quality team in accordance with the life cycle cost of individual information system projects.

Air Force answer. The Air Force knows of no special reviews by the Department designed to show the effectiveness and efficiency of its central design activities.

Army answer. The efficiency and effectiveness of the Army's Central Design Activities are assessed through reviews and audits of the programs which they produce. The Army Audit Agency and The Inspector General conduct these reviews and audits which are reflected in numerous reports.

Question. Show how the appropriation funding, above, relates to the exhibits 43A/B/C presented to Congress.

Navy answer. The appropriation funding for each CDA is not separately identifiable and, therefore, cannot be directly related to the 43A/B/C exhibits.

Marine Corps answer. All of the funding identified above for the central design activities is included in the 43A exhibit. Each of the activities are costed out at their share of equipment received for the folowing items identified on the 43B, and 43C exhibits: central processing unit augmentation, magnetic tape drives, and end user computing.

Air Force answer. The funding for Central Design Activities is included in Exhibit 43A. Exhibit 43A is a summary exhibit reflecting the total cost for Information Technology Systems. Exhibit 43B also reflects projects for the two Central Design Activities, as follows:

a. Air Force Standard Information System Center:

ADPE and Software Development for the Core Automated Maintenance System (CAMS).

On-line Minicomputer to Implement the Base Contracting Automated System (BCAS).

Base-Level Local Area Network Support.

Equipment Purchase for Data Systems Design Office at Gunter AFS, AL.

Command Budget Automated System (CBAS).

Base Level Network Control Facilities.

Air Force Integrated Readiness Measurement System (AFIRMS).

Initial Computer Support for Operational Flying Units (Wing through Air Staff).

Initial Computer Support for the Combat Ammunition Systems (CAS–B).

Initial Computer Support for the Medical Readiness Assemblage Materiel System (MEDRAMS).

Operational Support of the Uniform Chart of Accounts (UCA) Automated Source Data Collection (ASDC) system.

Base Level Information Services Program.

Telecommunications Center AUTODIN Terminal Equipment Replacement and Upgrade Program.

Initial Computer Support for a DoD Directed ADP Command and Control and Transportation Related Crisis Support System (TCAC-CIS).

Initial Computer Support for Base-Level System Cargo Processing and Tracking.

b. Air Force Manpower and Personnel Center:

Initial Computer Support for the Pipeline Management System.

Initial Computer Support for the Combat Personnel Control System II (CPCS II).

Initial Computer Support for the Combat Personnel Control System I (CPCS I).

Initial Computer Support for Personnel Concepts III.

Exhibit 43C contains a narrative statement on ADPS 59, Base Level Information Systems Program, for the Standard Information Systems Center and this statement encompasses those projects reflected in exhibit 43B. The exhibit 43C also contains the narrative statement on Advanced Personnel Data System (APDS) for the Air Force Manpower and Personnel Center and this statement encompasses those projects reflected in exhibit 43B.

Army answer. The data used to develop exhibits 43A/B/C are reported by systems and expenses (i.e., personnel expenses, commercial services) within the systems, not by activities. The Central Design Activities (CDAs) funding is, therefore, spread among the numerous software initiatives supported and is not visible in the exhibits as a discrete item.

Question. Why are these activities hidden in the budget?

Navy answer. The separate reporting of CDA data were eliminated several years ago as part of the Paperwork Reduction Act.

Air Force answer. The central design activities are not hidden. A separate aggregation is not required by any reporting directives.

Question. Were the costs of CDAs ever explicitly portrayed in the 43 exhibits?

Navy answer. In previous years data were submitted in this manner.

Air Force answer. Central design activities costs were not explicitly identified in prior year 43 submissions as unique exhibits. However, the costs were included in 43 exhibits according to the reporting criteria for those exhibits.

Question. Why are they omitted now?

Navy answer. The separate reporting of CDA data was eliminated several years ago as part of the Paperwork Reduction Act.

Air Force answer. These central design activities costs are not omitted from the FY87 budget. Reporting directives do not require a separate aggregation of their costs.

Question. Has the department considered centralizing the CDAs?

Navy answer. Yes, however, the consolidation of system design and development to accommodate the diverse nature of the functions each design agency supports could create an unnecessarily complex and unwieldly organization that would exceed the span of control for any organization. Although each of the activities addresses its own individual functional area of responsibility, it is not at liberty to design systems in other functional areas. Methods of oversight to prevent this from occurring include top-level management involvement on executive review boards. Further, information architectures are being utilized in conjunction with the planning and budgeting processes to integrate system development efforts across commands including CDAs and to prevent duplicative system development efforts.

Air Force answer. The Department has not to our knowledge considered centralizing the Services' central design activities.

Army answer. The Army is in the process of reviewing the centralization of all Army Central Design Activities (CDAs) under the US Army Information Systems Command (USAISC) as part of the ongoing Army Information Mission Area (IMA) initiative. Currently, Standard Army Multicommand Management Information Systems (STAMMIS) are developed by the Army's designated major design activity, the United States Army Information Systems Engineering Command (ISEC). The local design capability of most Army major commands (MACOMS) has already been transferred to ISC and take technical direction from ISEC. The focus of the current review is the major design activities of the US Army Materiel Command and the US Army Health Services Command. The issue is whether or not these activities should be guided through Army architecture, policies, regulations, and standards, or is centralized management under one organization required.

Question. Mr. Springett, have you ever formally studied it?

Answer. No, the Department has not formally studied centralizing the central design activities.

Question. What are the pros and cons of such a consolidation?

Navy answer. There seems to be some benefit that can be realized in the integration of systems through the consolidation of CDAs. However, this potential plus is offset by the negative impact such a move will have on the local commanders' ability to perform the command's mission. Further, the consolidation of the CDAs will create an unnecessarily complex organization that would exceed the span of control for any organization. The existing alignment of CDAs, consistent with the command's functional area of responsibility, provides an effective management structure for standardizing and integrating information systems without infringing on the commander's accountability for mission accomplishment.

Air Force answer. The question of pros and cons can't be answered accurately without conducting a thorough study. Consolidation of the Services' central design activities might well create such a huge unmanageable organization as to offset any economies of scale.

(1) Pros of consolidation.

Army answer. By answering to one commander responsiveness would be enhanced.

More efficient use of human and machine resources could be gained.

Application of Army architecture, standards, technical approaches and configurations would be easier.

Unnecessary redundancies and inadvertent voids could be more easily identified.

Technical information management expertise could be developed and maintained more easily.

Quality control could be more effective.

(2) Cons of consolidation.

The perception on the part of the functional proponent that control of the ability to influence the design of appropriate software is degraded.

The necessity for the technical CDA to ensure that responsiveness to the needs of the functional proponent is maintained.

The requirement to maintain with the functional proponent a small core of functional experts who also have whatever level of information management expertise is required to maintain proponent confidence in the development of the information management requirement and the CDAs deliverable products.

The Congressional limitations on the numbers of civilians geographically relocated and the physical space required to relocate the activities.

Question. Why is there no standard OSD definition of CDA's?

Answer. The Department agrees that a standard CDA definition is needed and is in the process of developing one.

Question. Provide draft bill language that in your opinion would cap the Department's CDA activities and capture the costs of Air Force central design-type activities as well.

Answer. The Department does not feel that legislation is appropriate at this time. We are taking action to capture costs of CDA activities.

ARMY GENERAL ADP ISSUES

Question. Is ASA/FM oriented and staffed to effectively develop, direct, and oversee the overall Army ADP program?

Answer. Yes, the Assistant Secretary recognized the significance of this responsibility and took action to enhance the capabilities of his staff. Two assistant positions were added to the staff of the Deputy for Information Resources Management within the past 18 months. The GM-15 position has now been filled for 1 year and the 0-6 position has recently been filled. Additionally, the newly confirmed Assistant Secretary has detailed a second Senior Executive from other important duties to assist in this area. The large majority of the Assistant Secretary's and his Prinicipal Deputy's time is now being devoted specifically to this critical management area. If further staffing is required to properly carry out the oversight responsibility of ASA(FM) in this critical area, I believe that the Assistant Secretary is committed and prepared to provide such staffing.

Question. Has the Army Information Architecture, as described in Department of the Army Pamphlet 25-1, been reviewed and approved by either the OSD Comptroller or the MAISRC?

Answer. Army will present the Army Information Architecture to the MAISRC. Informal discussions on the architecture have recently been initiated with OSD personnel to prepare for the MAISRC review.

Question. Does the DA Pamphlet 25-1 represent an approved systems architecture for the Army?

Answer. DA Pamphlet 25-1 describes the Army's evolving information system architecture. It was approved by the Assistant Chief of Staff for Information Management and was briefed to the Vice Chief of Staff Army prior to submission for publication. The Army's architecture will change over time as new technology, organizational structure and standards evolve. These changes will be incorporated semiannually into DA PAM 25-1.

Question. In your opinion, Mr. Springett, is the architecture one which places maximum emphasis on defining functional requirements, standards, and protocols to ensure competition?

Answer. OSD has not yet formally reviewed nor approved the Army Information Architecture. We have received informal staff briefings from the Army regarding their architecture. Our initial findings were that the architecture required additional supporting analysis to be performed. Previously, on April 12, 1985, the PDASD(C) directed the Army to make a full commitment to maintain competition in the acquisition of the ADP equipment, software or facilities management capabilities which will be used in the architecture.

Question. Was the Army decision to cancel the RFPs for both CAMIS and VFDMIS influenced by the Army's adoption of a three-tier architecture and its planned use of the VIABLE contract to meet CAMIS and VFDMIS requirements?

Answer. The adoption of an Army Information Architecture was not a contributing factor in the termination of the VFDMIS and CAMIS RFPs.

Question. Mr. Springett, have you approved this plan?

Answer. No. The Army's revised plan for CAMIS will be submitted for OSD review and approval under the MAISRC process.

Question. A March, 1986 GAO report on TRIMIS quotes an "Army Audit Agency report that the Army did not conduct representative workload testing before awarding a contract to automate its base operations. Current computer usage is over twice what was portrayed during testing. The Army indicated that this oversight has affected its ability to meet mission needs; computer capacity planned for mobilization contingencies must now be used to meet day-to-day requirements. Although the Army stated that additional computer capacity is required, the size and cost have not been determined."

Mr. Springett, does the Defense Department agree with the GAO characterization of the Army's VIABLE system? It is saturated?

Compare by fiscal year and appropriation, for each fiscal year shown in the 43-A-1 exhibit, the VIABLE funding stream in the current budget request to the funding shown a year ago to Congress. Explain in detail all major changes.

Earlier this year, Secretary Marsh testified that a working group was established in November, 1985 to better define the workload attendant to mobilization and assess the adequacy of VIABLE reserves. Provide for the record in detail the results of the working group's efforts.

Earlier this year, the Committee asked Secretary Marsh whether the approximately 600 personnel spaces predicted to be saved by VIABLE actually have been saved? The Secretary's response was less than clear. What is your estimate or forecast of manpower savings due to VIABLE? When will you know for sure? How many spaces have been removed from budget requests to Congress, in total by year and specifically in FY 1987?

Answer. VIABLE does appear to lack sufficient capacity to meet all user demands for service. However, Army is attempting to correct those initial saturation problems by increasing the system's capacity, within the scope of the original contract, and by effecting various efficiencies through operational and management initiatives. In line with those initiatives, an Army working group is reassessing the mobilization capabilities of VIABLE. That group only began its effort this past December, and results are not expected before late this summer. Additionally, the predicted 604 spaces reductions attendant to VIABLE have been taken. Two hundred and six spaces were withdrawn in FY 85, and the remaining spaces were withdrawn in FY 86.

The substantive differences in VIABLE funding shown in the FY 86 and 87 43A Exhibits are in Commercial Services and Capital Investment. The differences in Commercial Services occurred because FY 86 was Army's first experience with the 43A Exhibit, and it erroneously failed to include all applicable funding. The differences in Capital Investment were due to new initiatives that were approved and funded in January–March 1986. It is my understanding that an itemized report of all of these differences in the 43A by appropriations has been provided to the Committee. If any additional information is required, we would be pleased to provide it. VIABLE is currently fully operational at five Regional Data Centers (RDC) supporting forty-seven Army Installations in the Continental United States, Alaska, Hawaii, and Panama, with over three million lines of applications software code having been transitioned to the system, and all having been accomplished on-time and in budget.

NAVY GENERAL ADP ISSUES

Question. Is the office of the Director, DONIRM oriented and staffed to effectively develop, direct, and oversee the overall Navy ADP program?

Answer. Department of the Navy Information Resource Management (DONIRM) is well oriented to oversee the overall Navy ADP program. The Director, Department of the Navy Information Resources Management reports directly to the Assistant Secretary of the Navy (Financial Management). At the same time, he is on the staff of the Chief of Naval Operations as Director, Information Systems Division, reporting to the Director of Space, Command and Control. To provide integrated high level management to those computers excluded from the scope of the Paperwork Reduction Act of 1980, he is the senior official for Mission Critical Computer Resources, reporting to both the Assistant Secretary of the Navy (Financial Management) and the Assistant Secretary of the Navy (Research, Engineering, and Systems). In addition to DONIRM's own staff, the Naval Data Automation Command provides additional staff support and does a significant amount of reflated policy work as an agent of the Director, Information Resources Management/Information Systems Division.

Question. How does NAVDAC enforce the use of standards Navy-wide to ensure the efficient utilization of information technology when key organizations, such as the ADP Equipment Selection Office and the Central Design Activities are subordinate to other commands?

Answer. Naval Data Automation Command (NAVDAC) as a Command does not enforce standards for Navy activities outside of its span of control. Enforcement comes through chain of command direction and use of the Navy-wide standards by the Naval Audit Service and Navy Inspector General in their inspections of automatic data processing (ADP) activities. NAVDAC through its Navy Information Systems (IS) Standards Program (NISSP) and the Department of Navy IS Standards Committee (DONISS) has solicited and received the support of over 20 major Navy commands including the system commands and the Marine Corps. NAVDAC has frequent interaction with the ADP Equipment Selection Office regarding standards for use in procurement and the major Central Design Activities continue to be included in NISSP and DONISS Committee initiatives. NAVDACs Navy-wide standards are distributed to almost 700 Navy activities and are widely used on a voluntary basis thus precluding the need for more stringent enforcement. This is due to the participatory nature of the NISSP and the support given by Navy commands to the concepts of the DONISS committee.

Question. How can the Navy develop and operate information systems that are not duplicative given its decentralized management structure?

Answer. Navy views information management as an integral responsibility of commands. To hold commanders accountable for mission accomplishment, they must be given leeway to manage their information resources. The Navy has found that broad delegation of authority for local initiatives within the bounds of standard policy constraint provides an effective balance between standardization without infringing upon the commander's accountability for mission accomplishment. To limit duplication across commands, the Navy has instituted several management initiatives including:

An information systems planning process had been established which includes top down strategic guidance, bottom up command planning, and crosscutting functional direction.

Information systems architectures are sponsored and required to integrate information requirements across multiple commands.

System development proposals are scrutinized in accordance with standard information system policy at a command level determined by the magnitude of the system.

Programming and budget requests involving information managers are aggressively monitored by information resource managers.

Inspector General and Navy audit teams emphasize the critical aspects of information systems management in the course of their reviews.

A pilot project establishing a clearinghouse of information about existing automated information systems is being used to promote sharing of systems across commands. The objective of the Navy clearinghouse is to provide decision makers with information about existing and off-the-shelf systems. Based upon the significant number of information requests serviced by the clearinghouse, this concept is being studied as a way to improve service to customers and to reduce duplicative software development across commands.

Question. How does the Navy identify the operational costs of an ADP system, when those costs are merged into the operation and maintenance costs of individual commands?

Answer. Each major claimant within the Navy separately identifies the automatic data processing (ADP) related costs included in their operation and maintenance budgets for reporting in the Navy's ADP budget.

Question. Does the Navy have any plans to change the manner in which it tracks the operating costs of its ADP systems?

Answer. No, the Navy does not plan to change the way it tracks the operating costs of its automatic data processing systems. Navy is satisfied with present system that ensures proper oversight and accountability.

Question. What substantive efforts will be made by the Navy to improve coordination of ADP systems development with other services?

Answer. The Navy and other agencies of Department of Defense (DOD) share common concerns in the areas of information resources management. Office of the Assistant Secretary of Defense (Comptroller) chairs periodic meetings with not only the military services but with all of the DOD agencies. The Navy actively participated in the DOD Administrative Systems Exchange Project to help promote efficiency and economy gained through identifying the commonality in administrative functions and systems. The Navy Civilian Personnel Data System, being implemented by the Navy, was developed by the Air Force and was adopted by the Navy. Additionally, for the past 3½ years, a joint (Navy, Army, Air Force, Defense Logistics Agency) small computer requirements program has been used to effectively coordinate common procurement requirements. Work of this group has resulted in four small computer hardware and maintenance contractual vehicles common to the agencies concerned.

Question. Describe the MAISRC-like process the Navy uses to oversee the development of ADP systems.

Answer. The Department of the Navy (DON) life cycle management (LCM) process follows the Major Automated Information Systems Review Council through a literal interpretation of the Secretary of Defense (SECDEF) LCM procedures. The oversight and decision process is based upon Mission Element Need Statement (MENS) and System Decision Papers (SDPs) supported by a Project Management Plan. DON uses the same key SECDEF phases, i.e., mission analysis, concept development, definition design, system development and deployment/operation. Each phase results in a milestone decision based on the MENS and SDPs. DON policy calls for SDP IV which implements the Department of Defense system effectiveness reviews.

Question. Who participates?

Answer. All information systems (ISs) are subject to the LCM process. The LCM documentation requirements and the approval levels are based on the dollar value of the IS developmental costs and any special-interest concerns. As specified in SECNAVINST 5231.1B, functional sponsors, resource sponsors and ADP approval officials participate in the review of automated information systems. The specific participants depend on the cost of the system and the level at which it is approved. SECNAVINST 5231.1B also provides for Information System Executive Boards, which may have members in addition to those mentioned above. For very large projects or those of special interest within the Department of the Navy, special flag-level oversight boards may be established which meet as frequently as events in the system warrants.

Question. What systems are reviewed? What systems are not reviewed?

Answer. There is no threshold below which systems are not reviewed. Every IS is reviewed and approved at a level appropriate for the value and risk of the system.

Naval Occupational Health Information System (NOHIMS)

Question. The Navy's budget shows costs through fiscal year 1991 of over $12 million for the Naval Occupational Health Information Management System (NOHIMS).

What does the system do, what is its estimated life cycle cost, and what is its funding profile by appropriation in fiscal year 1985, 1986, and 1987?

Answer. It identifies worker's exposure to hazardous materials in the workplace and ensures potentially exposed personnel receive proper medical surveillance examinations as required by the Occupational Safety and Health Act of 1970.

Estimated life cycle cost from FYs 85 through 91 is $12.437 million.

Funding profile by appropriation in FYs 85, 86, and 87:

[Dollars in thousands]

	Fiscal year—		
	1985	1986	1987
Operation and Maintenance, Navy	347	216	797
Other Procurement, Navy	186	836	1,162
Total	533	1,052	1,959

Question. How does NOHIMS interface with standard DOD automated medical information systems and where is it redundant?

Answer. NOHIMS is not redundant, but uses the same software programming language as the TRIMIS ACCESS System, and receives personnel data from the Navy Consolidated Personnel Data System. NOHIMS provides the required occupational health workplace exposure records which current Department of Defense hospital based systems such as Comprehensive Health Care Systems do not.

Question. Has the development of this system been approved in writing by the Defense Medical Systems Support Center, as required in the Committee's Fiscal Year 1986 report? If not, why not?

Answer. NOHIMS Mission Element Needs Statement was issued in 1983. The Naval Data Automation Command approval of system decision paper I/II occurred in Apr 85. NOHIMS was an ongoing approved project prior to the establishment of the Defense Medical Systems Support Center and the 1986 requirement. The Defense Medical Systems Support Center was briefed on NOHIMS and supplemental information will be provided to the Center.

Question. Does the Assistant Secretary of Defense for Health Affairs fully support continued funding of NOHIMS?

Answer. The Assistant Secretary of Defense for Health Affairs (ASD(HA)) and the Assistant Secretary of Defense for Force Management and Personnel will conduct a joint review of NOHIMS. The ASD(HA) supports continued funding for the two prototype NOHIMS sites at the Occupational Health Clinic, North Island, San Diego CA and the Occupational Health Clinic, Puget Sound, as well as for the two additional occupational health clinics at Portsmouth NH, and Oakland CA where installation is planned this year. The ASD(HA) cannot approve additional funding for NOHIMS until the joint OSD review has been completed and a standard DoD occupational health information system has been determined.

AIR FORCE GENERAL ISSUES ADP

Question. Is SAF/FM oriented and staffed to effectively develop, direct, and oversee the overall Air Force ADP Program?

Answer. Yes, the SAF/FM staff has extensive experience both in the private and public sector in the areas of ADP acquisition management, contract administration, systems engineering, and both small and large scale systems development. This background provides the foundation necessary to effectively provide policy guidance and oversight of the Air Force ADP program. In order to enhance current capabilities, additional staffing is being considered.

Question. Describe the MAISRC-line process the Air Force uses to oversee the development of ADP systems.

Answer. All Air Force ADP systems are reviewed and approved by a corporate review board. Such boards are established at base, command headquarters, and HQ USAF level. Major automated information systems are also subject to review by the Automated Information System Acquisition Review Council (AISARC). This council, chaired by the Assistant Secretary of the Air Force, Financial Management (SAF/FM) provides a forum for reviewing automated information systems as specified in DOD Directive 7920.1.

Question. Who participates?

Answer. The requirements board at all levels consists of representatives of each major staff element. The AISARC includes the Assistant Secretaries, the General Counsel, the Vice Chief of Staff, the Deputy Chiefs of Staff, and the Comptroller of the Air Force.

Question. What systems are reviewed? What systems are not reviewed?

Answer. Systems exceeding the threshold identified in DOD Directive 7920.1 are subject to review by the AISARC. All other systems are reviewed by the appropriate requirements board at base, command, or Air Staff level. There are no candidates for automation support which are not required to be reviewed by a corporate review forum.

Question. What are the management and oversight responsibilities of the Assistant Chief of Staff, Systems for C4?

Answer. The management and oversight responsibility of the Assistant Chief of Staff, Systems for Command, Control, Communications and Computers, are established in AFR 700-1. These responsibilities include:

Ensure that acquisition, management, and use of information systems and attendant resources are conducted according to public law and other higher level policies.

Develop information systems objectives, plans, policies, and procedures.

Define, develop, and maintain Air Force information system architectures.

Ensure that information systems resource requirements are identified and considered in the planning, programming, and budgeting system (PPBS).

Review, direct, change, and terminate, as appropriate, information systems requirements, program directives, plans, and other systems documents to ensure effective and efficient mission support.

Question. Do these responsibilities include oversight of Air Force AIS's whether they are: major, non-major, tactical, nontactical, mission critical, non-mission critical, office automation, data communications, Air Force standard, or command unique? (Please address each area separately).

Answer. These responsibilities include oversight over major, non-major, tactical, non-tactical, mission critical, non-mission critical, office automation, data communications, Air Force standard, and command unique. The only exception is information related resources integral (from the design, procurement, and operation point of view) to a weapons system, or acquired though a prime contractor in conjunction with a weapons system program which provide dedicated and direct support for that weapons system. These are managed under the 800-Series regulations and oversight is maintained by the Assistant Chief of Staff for Research, Development, and Acquisition.

Question. Is this office responsible for reviewing and evaluating Air Force AIS's from an information resources management (IRM) perspective, as opposed to only a budgetary review?

Answer. This office has responsibilities from both an IRM and a budgetary review perspective. Requirements are evaluated and solutions are developed for overall compliance with Air Force architecture.

Question. Does this office only review major systems?

Answer. No, in addition to major systems, this office reviews various programs in accordance with criteria specified in AFR 700-3.

Question. Who is responsible for designating an Air Force AIS as a mission critical computer resource?

Answer. Air Force Regulation 700-4 defines the categories of AIS eligible for mission critical computer resource (MCCR) designation. AF/SC is responsible for designating systems critical to the direct fulfillment of military or intelligence missions within guidelines established by SAF/AL. In keeping with the USAF policy to decentralize decision making, Air Force Major Commands determine designations in the other categories.

Question. Who is responsible for managing and reviewing Air Force MCCR programs?

Answer. AF/SC is responsible for managing and reviewing Air Force MCCR programs.

Question. Does the Air Force consider DOD Directives 5000.1 (major systems acquisitions) and 7920.1 (life cycle management) to be binding on the design, development, operation, use, and maintenance of its AIS's?

Answer. Yes, it does. Air Force AIS's are managed using the guidelines established in both Directives.

Question. To what extent and in what manner does the Air Force apply the provisions of these directives to both major and non-major AIS's, as those terms are defined in those directives?

Answer. Automated information systems (AISs) meeting the thresholds of DOD Directive 5000.1 are managed under the direction of Air Force regulations in the 800-series. AISs not meeting the thresholds of DOD Directive 5000.1 are managed under the 700-series regulations in harmony with DOD Directive 7920.1. Both approaches require review by corporate forums at appropriate levels.

Question. How does the Air Force apply the provisions of these two directives to both MCCR and non-MCCR systems?

Answer. The Air Force implements DOD Directive 5000.1 through the 800-Series regulations and DOD Directive 7920.1 through the 700-Series regulations. They both apply to MCCR and non-MCCR systems. The only significant management difference between MCCR and non-MCCR is that the non-MCCR systems require a Delegation of Procurement Authority (DPA) from the General Services Administration.

Question. How many Air Force AIS's are planned, under development, and presently in operation that meet the criteria for designation as a major AIS?

Answer. Twelve systems which meet the criteria for designation as a major AIS are either planned, under development or presently in operation.

Question. How many Air Force AIS's are planned, under development, and presently in operation that do not meet the criteria for designation as a major system?

Answer. Headquarters Air Force does not maintain records which provide the number of AIS's below major AIS thresholds.

Question. How many major and non-major AIS's have been designated MCCR systems or programs?

Answer. As of 17 March 1986, there are 121 major and non-major AISs which have been designated MCCR systems or programs.

Question. To what extent and in what manner do the total life cycle cost provisions of DOD Directive 7920.1 apply to the Air Force major, non-major, MCCR, and non-MCCR systems?

Answer. The life cycle cost provisions of DOD Directive 7920.1 are applicable to all major automated system acquisition programs. For non-major, MCCR and non-MCCR systems managed under the AFR-700 series regulations, contracting strategies and procurement decisions must consider lowest total overall cost (LTOC). MCCR systems acquired under the AFR-800 series regulations are also managed under life cycle cost concepts as defined in AFR 800-11.

Question. Is each Air Force Major AIS scheduled for a MAISRC review?

Answer. The Office of the Secretary of Defense (Comptroller) (OSD(C)) normally selects only a few Air Force projects above the major AIS thresholds for MAISRC review. Those not selected are managed by the Air Force. Currently OSD(C) is reviewing a list of new Air Force candidates of major AIS's. Selection of these new candidates by OSD(C) is not yet complete.

Question. DOD Directive 7920.1 establishes a control mechanism to assure that an AIS is developed, evaluated, and operated in an effective manner throughout its entire life. How does the Air Force identify, track, and maintain AIS life cycle cost data?

Answer. AFR 800-25, Acquisition Program Baselining, and AFR 700-4, Information Systems Program Management and Acquisition, require automated system programs with costs exceeding $5 million in any one year to establish, and update program cost baselines throughout the acquisition cycle. For designated automated system programs, the acquiring, using, and supporting organizations are required to develop a program baseline which summarizes the requirement; program content in terms of schedule, equipment, sites, etc.; and program funding over the Five Year Defense Plan window. After the baseline is signed and approved, significant changes to the program require the submission of updates to the baseline, including funding data.

Question. Do these life cycle costing procedures apply equally to both major AIS's and non-major AIS's?

Answer. Yes. All major and specifically designated non-major automated system programs are baselined at the Air Staff level. Other programs not designated for review at the Air Staff which have annual costs exceeding $5 million in any one year are baselined at the major command level using the same procedures.

Question. To what extent does the Air Force identify such costs throughout an AIS's entire life cycle, as described in DOD Directive 7920.1?

Answer. DOD Directive 7920.1 seeks the establishment of "a control mechanism to assure that an AIS is developed, evaluated and operated in an effective manner at the lowest total overall cost." AFR 700-4, Information Systems Program Management and Acquisition, requires information systems to be acquired at the lowest total overall cost.

Question. To what extent does the Air Force consider AIS total life cycle costs to be timely, accurate, and reliable?

Answer. The Air Force considers the AIS total life cycle cost sufficiently timely, accurate, and reliable to meet our management needs.

Question. Why did the Air Force have so much difficulty providing the Committee's investigative staff with life cycle costs on its programs?

Answer. The information requested is not maintained at HQ USAF. The information had to be obtained from each of the major commands and field organizations by mail.

Question. Why does the Air Force only keep life cycle cost on its systems to the point of initial operating capability, rather than throughout the life of the system as required by DOD directives?

Answer. The Air Force estimates life cycle costs on its information systems through the implementation of the final site, full operational capability (FOC), for measurement against cost thresholds as required by DOD Directive 7920.1.

Question. Mr. Springett, why do you allow this to happen?

Answer. DOD depends on the head of each Component or Agency to ensure that the DOD policy is properly followed. I understand that the Air Force has recently provided guidance to their users that extends cost tracking through the end of the acquisition cycle.

Question. What effort is underway in the Air Force to identify and maintain total life cycle cost for all its AIS's? When is this effort expected to be completed?

Answer. The Air Force currently manages life cycle costs in accordance with DOD Directive 7920.1.

Question. Are Air Force AIS program managers required to develop and maintain a funding profile for each AIS that provides cost data for the current year budget request, the five outyear funding estimates, and the system's estimated total life cycle costs? If so, why did the Air Force have so much difficulty providing this type of information to the Committee's investigative staff?

Answer. AFR 800-25, Acquisition Program Baselining, and AFR 700-4, Information Systems Program Management and Acquisition, require automated system programs to establish and update program cost baselines throughout the acquisition cycle. For designated automated system programs, the acquiring, using, and supporting organizations are required to develop a program baseline which summarizes the requirement; program content in terms of schedule, equipment, sites, etc.; and program funding over the Five Year Defense Plan window. After the baseline is signed and approved, significant changes to the program require the submission of updates to the baseline, including funding data. Many of the programs in which the Committee's investigative staff expressed interest are managed by our major commands. Information requested on those programs had to be obtained from the major commands by mail.

Question. Are efforts underway in the Air Force to provide uniform fiscal management for its AIS's? When will these efforts be completed?

Answer. The 700-series regulations prescribe a uniform management structure for information systems and include fiscal management considerations.

Question. Does the Air Force use uniform procedures in the development of such estimates in order to provide a common basis for comparison? If so, what are they?

Answer. Yes. The 700-series regulations prescribe a uniform management structure for information systems fiscal management which includes the application of two other directives. AFR 178-1, Economic Analysis and Program Evaluation for Resource Management, governs the development of Economic Analysis for AIS's and AFR 800-25 has recently been published (7 April 1986) which provides a standard format and definition for program cost.

AIR FORCE MEDICAL ADP

Question. Mr. Springett, the Air Force 43B/C budget exhibits show little automation for medical systems. This is not credible.

Show a funding profile for fiscal years 1985, 1986, and 1987 for all Air Force medical ADP programs, whether operation and maintenance or upgrades, by appropriation.

Answer.

[In millions of dollars]

	Fiscal Year—		
	1985	1986	1987
Uniform Chart of Account (UCA)	7.31	3.28	3.68
Capital investment (3080)	5.01	.94	1.13
Leasing (3400)			
O&M (3400)	2.30	2.34	2.55
Medical Readiness Assemblage Material System (MEDRAMS)	0	1.20	.60
Capital investment (3080)	0	.30	.23
Leasing (3400)			
O&M (3400)	0	.90	.37
Medical Materiel Management System—On-Line	0	1.02	1.90
Capital investment (3080)	0	.61	0
Leasing (3400)			
O&M (3400)	0	.41	1.90

Question. Name the Air Force medical ADP systems currently being upgraded, either hardware or software, and show their life cycle costs. (Be sure to use the DOD definition of life cycle.)

Answer.

[Dollars in millions]

System	Total costs	Years
UCA	$39.4	1983–95
MEDRAMS	10.0	1981–92
MMMS–OL	36.7	1986–95

Question. Specifically, describe the Air Force Medical Material Management System On-Line, provide an estimated life cycle cost, and the funding profile in fiscal years 1985 to 1987 by appropriation, and describe the upgrades currently taking place.

Answer. The Air Force Medical Material Management System (MMMS–OL) is a comprehensive Medical Logistics System that includes automated management of Medical/Dental Stock Fund inventories to include requisitioning, receipt and issue of operating and WRM supplies and equipment. MMMS–OL also includes quality assurance, excess, reports processing, equipment accountability and biomedical maintenance functions. This system upgrades the current batch processed MMMS that was developed in the 1960's and supports the DOD directive to eliminate punch card systems. MMMS–OL is essentially identical to the Medical Readiness Assemblage Material System (MEDRAMS) which has been fielded at Air Force Wartime Contingency Hospitals. This will ensure wartime readiness by providing only one logistics system and will significantly reduce training problems. The estimated life cycle cost of MMMS–OL is $36.718M. The FY 85–87 funding profile is

[In millions of dollars]

	Fiscal year—		
	1985	1986	1987
3080	0	0.614	0
3400	0	.413	1.9

Question. Has MMMS On line been coordinated with the Defense Medical Systems Support Center and approved in writing?

Answer. In March 1978, official TRIMIS Program Office approval to develop MMMS–OL as a non-TRIMIS System was received. The 1982, and follow-on 1984 TRILOG written Memoranda of Agreement, also authorized the military services to design, develop, update and enhance medical logistics systems at their own expense. In December 1985, representatives from the Defense Medical System Support Center were briefed on the background, problems with the batch MMS and current status of MMMS–OL. Initial orders for MMMS–OL hardware for Environmental System Testing were processed through DMSSC.

Question. Describe how MMMS will interface with standard DOD medical information systems, and where they will be redundant.

Answer. The Air Force Medical Logistics Division has requested that the Central Processing Distribution (CPD) System of the DOD Composite Health Care System (CHCS) have interface capability with MMMS–OL. MMMS–OL currently has interface capability with the DOD Uniform Chart of Account (UCA) System. MMMS–OL does not include a CPD subsystem and does not duplicate UCA functions.

Question. Does the Assistant Secretary of Defense for Health Affairs fully support continued funding of MMMS?

Answer. Although a standard DOD medical logistics system has not been developed, the Air Force MMMS–OL system appears to satisfy many standard DoD medical logistics requirements already identified. To date, the Air Force has not requested formal coordination or approval of its MMMS–OL from the Defense Medical Systems Support Center (DMSSC). If MMMS–OL were reviewed by the Defense Medical Systems Support Center (DMSSC) and found acceptable as the basis for a DoD standard medical logistics system, and if an acceptable lead Service arrangement were negotiated between the DMSSC and the Air Force, the Assistant Secretary of Defense for Health Affairs would fully support continued funding for this program.

SAC War Planning

Question. The budget shows $242 million planned for the SAC War Planning System. Why is there no exhibit 43 A1 for this item?

Answer. The SAC War Planning System is included in the exhibit entitled World Wide Military Command and Control System.

Question. Does this system follow life cycle management policy, and could it stand an audit to prove it?

Answer. The SAC War Planning System follows the life cycle management policies spelled out in Air Force directives and could undergo an audit to verify compliance with this policy.

USMC General ADP Issues

Question. The Marine Corps ADP budget claims that "the Marine Corps has no Automated Information Systems which are classified as major AIS under DoD 7110-1-M". Yet the Mid-Range Information Systems Plan for FY 1986 to FY 1992 shows that the Marine Corps is planning to spend at least $127.7 on a "CPU Augmentation" initiative, of which $103 million alone is for procurement of equipment.

Please explain the apparent discrepancy between the two documents.

Answer. The Central Processing Unit (CPU) Augmentation Program is not an Automated Information System (AIS) as defined by DoD 7110-1-M and therefore was not reported as such. Part IV of the Marine Corps ADP budget (IT43-B) identifies this as a major information technology acquisition plan, as well as does the Mid-Range Information Systems Plan (MRISP). But this technology is in support of numerous AIS's, none of which exceed the thresholds which define major AIS's. Nevertheless, the funding identified in the budget, and in the MRISP, does not reflect a single procurement action, but in fact are for two completely different actions. These two procurement actions are shown under one funding profile only to reflect a Marine Corps commitment to keep pace with rapidly changing technology, and rapidly increasing user requirements. One aspect of this funding profile identifies a known procurement which began in FY86 and extends through FY88, and is meant to augment the existing CPU capacity. Funding figures beyond FY88 reflect the second aspect of this funding profile which is only a best estimate of potential mainframe processor costs in support of new AIS's that are presently under development or in final planning stages, and existing AIS's that will still be viable processes. Whereas one procurement is actual and is in fact an augmentation of existing resources in order to keep abreast of increasing demand (this action will cost between $27 million and $50 million over 36 months depending on options exercised), the other procurement is anticipatory in the sense that no action beyond preliminary planning has occurred. One doesn't relate to the other, but they were logically linked because of the Marine Corps centralized AIS management philosophy. The message this funding profile was meant to convey is that existing informaton processing requirements will be supported, and future requirements are being planned for. This funding profile should not be misinterpreted as an AIS, which it is not. It also should not be interpreted as one procurement, which it is not. The update to the MRISP will be more definitive to clarify this misrepresentation.

Question. When do you plan to conduct a MAISRC on this initiative?

Answer. A MAISRC is not planned. However, (a) the Marine Corps has a good track record for managing their procurements, (b) the C4 Division of the Marine Corps is considered competent to manage their information processing requirements, and (c) an on-site review of this acquisition will be scheduled in Fiscal Year 1987.

Question. When was the USMC centralized ADP management created, and why was it created?

Answer. The Marine Corps established the Command, Control, Communications, and Computer Systems Division on 1 November 1976 because of the ever-increasing overlap and interdependency of command and control systems, communications, and computers.

Question. What benefits have been realized from centralized ADP Management in assisting flag rank officers in becoming more aware of the role AIS's play in the conduct of day-to-day operations and accomplishment of assigned missions?

Answer. The Assistant Commandant of the Marine Corps (ACMC) Committee is a forum of flag officers at the highest level of Marine Corps leadership, representing the major Headquarters Marine Corps staff agencies. This committee has established an Information Systems Steering Committee consisting of flag officer level representatives of the members of the ACMC Committee. The Information System Steering Committee, working as a direct arm of the ACMC Committee, is charged with Information Resources Management (IRM) oversight. Because of the centralized management philosophy of the Marine Corps, IRM issues which impact on the entire Marine Corps, are raised to the attention of this committee. IRM issues which cannot be resolved at the Information Systems Steering Committee level are raised to the ACMC Committee level. This flag officer involvement focuses high level attention on Marine Corps issues and makes the flag rank officers keenly aware of the role that AIS's play in the conduct of day-to-day operations and accomplishment of assigned missions.

Question. What benefits have been realized from centralized ADP management in enabling flag rank officers to more effectively prioritize AIS requirements in the USMC POM process?

Answer. Much of the above answer also applies here. Additionally, a work group established by the Information Systems Steering Committee consolidates all information resources POM initiatives and establishes an overall prioritized list. Prior to the formation of the Steering Committee, prioritization of information resources initiatives was accomplished by ad hoc groups that did not represent an overall Marine Corps perspective. Now, prioritized information resources initiatives are submitted to a flag officer level that has a Marine Corps-wide perspective. This top level flag officer involvement fosters a thought process which can more effectively incorporate AIS requirements within the overall POM prioritization and approval process.

Question. What benefits have been realized from centralized ADP management in providing more efficient and effective management oversight of USMC AIS's?

Answer. Centralized oversight of Marine Corps AIS's is primarily accomplished by functional managers, working in conjunction with systems analysts within Command, Control, Communications, and Computer (C4) Systems Division. Functional managers are directed by Marine Corps Order 5231.1, "LIFE CYCLE MANAGEMENT OF AIS's", which specifies certain requirements for system oversight reviews by either functional steering committees, or by the Information Systems Steering Committee. Milestones within the above oversight reviews are subject to operational compatibility reviews by analysts of C4 Systems Division. Additionally, most of the major system development efforts are accomplished by the three Central Design and Programming Activities which are operationally controlled by C4 Systems Division. The primary benefit derived by these overlapping review levels is an end product that answers the requirement of the functional area, and at the same time, is compatible with existing and planned AIS's and computer system architecture.

Question. What benefits have been realized from centralized ADP management in developing architectures for both tactical and nontactical AIS's?

Answer. Centralized ADP management over tactical and nontactical AIS's is a function of C4 Systems Division. AIS's generally defined as non-tactical or administrative, are managed by the Information Resources Management Branch, and tactical or embedded computer resources considerations are managed by the Tactical Command and Control Systems Branch. Overall policy emanates from the Director, C4 Systems Division, and coordination is accomplished through staff interaction between the above two branches. At this time the Information Systems Steering Committee charter excludes tactical systems from the managerial oversight functions this forum was organized to provide. But, the tactical aspects of administrative processing (ie: deployability concerns), have always been prime considerations in all hardware and software acquisition and development efforts. In this sense, non-tactical (administrative) AIS's become tactical when processed in a deployed environment. Tactical (excluding embedded computer resources) and non-tactical AIS's are only defined by where they are processed, not by architecture.

Question. What benefits have been realized from centralized ADP management in developing a non-tactical AIS standardization program?

Answer. Non-tactical AIS standardization is both a function of the development process, and the computer system architecture. The development process mandates numerous review milestones to ensure adherence to software developmental guidelines as well as existing hardware technology constraints. AIS standardization has been directed, and organizationally supported since 1976, when the three Central Design and Programming Activities were designated. The Marine Corps has realized substantial benefits because standardization has reduced training requirements, lowered software maintenance costs, and facilitated more effective data exchange and access.

Question. What benefits have been realized from centralized ADP management in enforcing AIS design, development, operation, and maintenance standards?

Answer. AIS design, development, operation, and maintenance standards are enforced through the functional and organization review processes described previously. Centralized standards enforcement is monitored by C4 Systems Division, but oversight extends up through the Information Systems Steering Committee. This high level support is important to ensure uniform compliance across both regional and functional boundaries. An additional benefit of consistent AIS standards is that this uniformity facilitates equitable transfer policies for data systems personnel.

Question. What benefits have been realized from centralized ADP management in improving computer security?

Answer. Computer security, both physical and logical, have been dramatically improved because of centralized management. A section within the Information Systems Support and Management Branch has been organized to specifically coordinate all aspects of information resources security for Marine Corps data processing sites. Logical security has been implemented across all sites by means of a standardized commercial software package. The benefits of this standardization accrue to both functional and technical personnel. Functional personnel who are responsible for the data, appreciate the standardized procedures and levels of data security possible, and technical personnel realize considerable systems overhead space savings because only one data security package need be maintained. Physical security is accomplished by the individual processing sites, as directed by the centralized security oversight section. This allows security experts at Headquarters Marine Corps to promulgate state of the art security guidelines for all sites to follow, and results in personnel savings because full time (security related) manpower at individual sites is not necessary.

Question. What benefits have been realized from centralized ADP management in preventing software obsolescence?

Answer. Centralized ADP management offers the benefit of an oversight mechanism that allows early identification of software obsolescence. In this context, software obsolescence is defined as software that is costly to maintain and which cannot be easily modified to keep pace with changing user requirements. When software is developed and/or modified locally or regionally, it is more difficult to spot the true cost of that maintenance or modification. Because functional and technical oversight at the Headquarters Marine Corps staff level has resulted in cross-functional data coordination, the major logistics development effort (M3S) shares data elements with the major fiscal development effort (SABRES), which shares data elements with the major manpower development effort (REAL FAMMIS). Certainly, data sharing provides design efficiencies, but of primary importance is the top-level communications process which expedites the identification of the right time to embark on the modification/development effort. Decentralized efforts lack this communications advantage, which makes obsolescence identification more difficult, and development more parochial.

Question. What benefits have been realized from centralized ADP management in reducing the need for local command unique AIS's?

Answer. Centralized management offers both direct and indirect benefits relating to reducing the need for local command unique AIS's. Hardware capacity planning and data services manpower resource estimates are projected by Headquarters, Marine Corps staff based upon clearly defined functional requirements estimates. The prime mission of Regional Automated Services Centers is direct processing support for these centrally managed AIS's, that have Marine Corps wide applicability. However, there is a processing margin available under the cognizance of the local Regional Automated Services Center Director, and the local command chain, that allows some latitude for the processing of regionally unique requirements. This processing power available for local command prerogative, provides an opportunity to satisfy locally unique functional requirements, and a Regional Automated Service Center training function (ie: practical experience in AIS development and testing). Because both manpower and hardware are constrained due to primary mission commitments, local requirements must pass rigorous local selection criteria. Many commands are investigating the feasibility of forming regional Information Systems Steering Committees to manage local information issues. The local selection process is extremely demanding; many requests are denied, many requests are prioritized low and consequently never reach development stages, some requestors are appraised of existing systems which will satisfy the need, some requests are found to have Marine Corps wide applicability and so are assigned to CDPA development teams, and a select few are approved for development and local processing. Indirect benefits accrue because local processing is limited, but available under the management oversight of regional command structures (as opposed to arbitrary HQMC mandates). Direct benefits accrue because data processing personnel not assigned to CDPA's are kept in touch with system development methodologies.

DLA GENERAL ADP ISSUES

Question. DLA automation was addressed by the Committee in its 1986 report due to dramatic cost growth and DoD Inspector General concerns about DLA's program management, cost growth, interim sole-source acquisitions, and reduced competition.

Mr. Springett, the Committee understands that a MAISRC was scheduled on DLA ADP modernization in March 1986.

Answer. We had anticipated a MAISRC during March 1986. However, the ASD (A&L) is currently performing a detailed functional review of the DLA program prior to its submission for MAISRC review. We anticipate the DLA MAISRC will be rescheduled for the summer of 1986.

Question. What specific guidance was given to DLA?

Answer. None pending the MAISRC review.

Question. When do you plan to report to the Committee as required in last year's report?

Answer. DoD plans to conduct a MAISRC review of DLA's Logistics Systems Modernization Program (LSMP) during the summer of 1986. Upon completion of the MAISRC review, the House Appropriations Committee will be informed of the MAISRC decisions and directions as soon as they are available.

Question. How do these decisions affect the funding profile presented in the budget to Congress?

Answer. While the MAISRC has been rescheduled, DLA has worked closely with the OSD staff in preparation for the formal review. DLA has briefed their program to the ASD Acquisition and Logistics, Dr. Wade, and we collectively believe the funding profiles provided to Congress will not be significantly changed by the MAISRC review.

Question. Of the $87.2 million DLA is requesting for FY 1987 for computer equipment, how much is necessary to satisfy actual logistics transaction workload growth, and how much is for ADP modernization?

Answer. The $87.2 million is funding to procure not only computer equipment, but contractual services, telecommunications, minor equipment purchases, installation and maintenance support. Workload growth and modernization costs are not separately calculated in developing ADP equipment and software requirements. Instead a planned increment for implementation is identified and costed including both elements (growth and design changes). An estimate would be $30.0 million of the $87.2 is modernization and the remainder is workload growth.

Question. Mr. Springett, if Congress does not provide funds for these computers, which DLA mission will not be met?

Answer. DoD/DLA strategic plans involving two of the major DLA missions of contracting and supply support will eventually be impacted if funds are not provided as planned. The contracting area covers approximately 450,000 contracts administered by DLA for all services and 30 million or two-thirds of annual DoD requisitions. The capability to support an expected 5% workload growth in all mission areas will be directly impacted by lack of funds.

Question. $12.5 million of the FY 1987 request is for front-end processors for the DLA network. The Committee understands that DLA recently upgraded the same equipment. Why is this replacement thought to be necessary?

Answer. The $12.5 million requirement for replacement of the front-end processors (FEP) is necessary to establish an Open Network Architecture (ONA) and to comply with both GSA and OSD mandates to competitively replace the COMTEN FEPs that were acquired sole source. The ONA components include computer to computer communications called the Local Computer Network (LCN) and local area network as well as FEPs.

The LCN is the critical first step in DLA's Logistics Systems Modernization Program and is essential to assure the effective development of interoperable logistics systems. It will be used in near-term modernization efforts to provide the stepping stones for LSMP modernization efforts. The LCN will create an environment where full and open competition is fostered by permitting multiple vendors' equipment to be interfaced to a common network for cost-effective data and resource sharing and reduce the transition/conversion as new modernization modules are implemented.

Question. What is the impact if no funds are provided?

Answer. If no funding is provided in FY 1987, the LCN/FEP acquisition and implementation will be delayed until such time as adequate funding is made available. Consequently, there will be delays in achieving desired levels of interoperability, which may adversely impact overall DoD logistics systems modernizations efforts. Furthermore, the longer it takes to get the necessary funding for the project, the more costly it may be to implement.

Question. To what specific logistics mission is this acquisition related?

Answer. This acquisition is related to all DLA missions such as materiel management, contracting, reutilization and marketing, and logistics data which require data communications support.

Question. $20.1 million of the FY 1987 request is for new computers at DLA's Defense Contract Administration Service Regions to support future modules of the MOCAS system. Due to an adverse DoD Inspector General report, DLA has terminated any future development of systems modules which use the data base management system in question. Why are the FY 1987 funds necessary?

Answer. The DCASR CPU's ($4,050,000) are required in order to implement the MOCAS Phase II on-line systems at the remaining larger DCASRs (NY, BOS, PHI, and LA). The system is currently operational at five DSCARs (ATL, CLE, CHI, STL, and DAL). They are not intended for future development of systems modules. The larger DCASRs require increased capacity in order to implement the on-line system and accommodate workload growth. Functional benefits are:

a. Provide on-line access by DCASR functional users and Military Departments to DCASR contract management data base.

b. Full Military Standard Contract Administration Procedures (MISCAP) incorporated into the system.

c. Improved Quality Assurance management system.

The additional computer power is needed to accommodate workload growth which has expanded from 312,000 to 396,000 contracts at DCASRs during the past two years, representing more than 25% workload growth.

Improvements in progress payment controls to avoid over payment of ACO generated modifications are also to be included in the near term.

The figure $20.1M is a typographical error which only appears in the FY 1987 Information Technology Narrative Summary for the Exhibit 43A. The actual estimate that the budget is built on is $10.1M which is needed to purchase Central Processing Units (CPU) for Defense Personnel Support Center as well as Defense Contract Administration Region (DCASRs).

Question. What is DLA doing to develop a single, integrated strategic plan for its ADP resources?

Answer. DLA has initiated a major program that provides for a single, integrated strategic plan to modernize its logistics management systems. The DLA Logistics Systems Modernization Program (LSMP) is founded upon the Agency's corporate Strategic Plan. LSMP is the management vehicle to plan, resource and execute the wide range of activities necessary to provide those new systems and associated functional capabilities sought by the supported Services and Agencies, the Office of the Secretary of Defense (OSD), and the Congress.

Question. How has DLA responded to recent GAO recommendations that it improve its long range ADP planning, organizational controls, cost and capacity management information, and management reporting systems improvements?

Answer. DLA concurred with the recent GAO recommendations and has taken actions to implement the recommendations. To better define ADP organizational responsibilities and controls, an Information Resources Management (IRM) regulation has been developed to define roles, responsibilities, and procedures for managing information resources. An IRM Plan has also been developed which identifies objectives, goals, and projects for IRM program management, data management, information systems, end user support, information resources technology, acquisition, telecommunications, forms management, records management, and reports management.

In response to a need to develop a long-range plan for automated information resources, DLA has developed an Information Systems Management Plan which addresses the DLA Strategic Integrated Logistics Plan, logistics systems functional requirements, an integrated priority list of projects, ADPE/T architecture concepts, acquisition strategies, and information system development/deployment strategies.

DLA has taken several actions to implement a comprehensive computer capacity and performance evaluation program. Specifically, DLA has acquired capability to model proposed or partially developed systems, forecast impacts on ADP/T capacity, and estimate costs of design alternatives. DLA has established a DLA Capacity Management Steering Group which meets monthly to review ADP/T capacity issues, prioritize modeling projects, and review requests for Performance Analysis Team visits. In addition, Capacity Management Committees have been established in the Primary Level Field Activities (PLFA) to serve as a liaison with the Agency steering group and report ADP/T capacity information. DLA has established a management information system known as the DLA Information Systems Performance Report (DISPR) which contains ADP utilization data, ADP modeling studies, and PLFA ADP/T costs and workload indicators by fiscal year.

Question. Describe the DLA oversight process that parallels the OSD MAISRC process.

Answer. The DLA oversight process parallels the OSD MAISRC process by ensuring consistent management and control disciplines based on life cycle management principles in DoD Directive 7920.1 and detail major systems approval processes in DoD Instruction 7920.2. DLA requires functional need identification and validation and manages systems development based on five major life cycle management phases. These phases require specific documentation approvals prior to proceeding to the next phase of the system. Just as OSD reviews are conducted at designated decision points during the system life cycle, DLA conducts in process reviews and the DLA Director reviews and approves major system decision milestones. Functional project managers are directly accountable to the Logistics System Modernization Program Manager who in turn reports program/project progress to the DLA Director. The DLA Corporate Management Group reviews all project requirements as they compete for resources and prioritizes projects based on mission objectives and projected benefits.

TRI-SERVICE MEDICAL INFORMATION SYSTEMS (TRIMIS)

Question. The planned competition for the Composite Health Care System, which is the largest part of the TRIMIS program, is expected to have life cycle costs between $800 million and $1.1 billion.

What specific actions will DOD take in response to the March 1986 GAO report on the Composite Health Care System?

Answer. The General Accounting Office (GAO), in the draft report reviewed by DoD, stated that "DOD's source selection methodology is sound." However, four areas of concern were identified. The DoD has initiated action to correct or respond to all four areas.

First, GAO expressed concern that the extended benchmark test does not include many complex and beneficial validated functional requirements. GAO recommended that DoD evaluate the cost of including all functional requirements in the extended benchmark test, and that at a minimum, the DoD should have the CHCS program systems engineering and technical assistance contractor certify that all complex CHCS functions are addressed during the benchmark test.

The DoD has considered the cost, risk and schedule aspects of including all functional requirements in the extended benchmark test. DoD believes that the CHCS extended benchmark test as currently formulated is both an appropriate risk reduction strategy and a cost effective way of evaluating system capability. The current design of the extended benchmark test has been approved by the CHCS Major Automated Information Systems Review Council (MAISRC).

Additionally, A. D. Little has independently reviewed the CHCS specifications and those for the extended benchmark test, and has concluded that all complex functions are contained in the test.

As further risk reduction measures, DoD has added functions to the beta site operational test, so that all CHCS Phase I and II functions will be fully tested prior to proliferation. Concurrently, TRIMIS is conducting a review of all functions contained in Phase III to identify all functions not adequately described for "firm fixed price" quotation. All functions not adequately described will be reviewed and redefined, or deferred as appropriate. These measures aggregately minimize risk to the CHCS acquisition.

The Defense Medical Systems Support Center and the TRIMIS Program Office will continue to work with the MAISRC to investigate whether there are additional steps which can be taken to further minimize this risk. As described in response to a later question below Phase I and II functions of CHCS will be clearly quoted in the offerors' cost proposals and must be demonstrated in the extended benchmark test, as well as beta site testing.

Second, GAO pointed out that the final vendor contract to deploy the selected CHCS to all military medical facilities is to be awarded before the vendor demonstrates that the system will work in a military hospital.

DoD agrees that this action poses unnecessary risk. Accordingly, DoD will modify the CHCS Request for Proposal to make the deployment contract contingent upon successful testing in the beta site military hospitals.

Third, GAO was concerned that approved functional requirement changes were not included in the Request For Proposal (RFP).

DoD agrees that approved changes should be provided to vendors, but feels that the GAO concern stems from a misunderstanding of the planned approach. A functional baseline was established for the RFP and changes were frozen prior to release of the RFP. All change requests received after establishment of the baseline were systematically dispositioned by a configuration management process, and approved changes will be provided to the vendors after initial contract award.

Fourth, GAO is concerned that essential site preparation and hardware equipment requirements for all Medical Treatment Facilities (MTFs) will not be studied until after final contract award.

DoD will collect site preparation and engineering data from all sites and provide this data to the vendors involved in the post-award competition. Furthermore, additional workload data on the median and largest sites in each category will be collected and provided to the competing vendors. More details on these categories are provided in the response to a later question.

In summary, after review of that DoD response to the draft report, the GAO made the following comments in the final interim report: "If DoD completes all of its changes planned in response to our recommendations, then this action should substantially reduce the risk involved in acquiring CHCS."

Question. How many military medical treatment facilities will be served by CHCS, and what effect will delay in reestablishing requirements have on hardware deployment goals?

Answer. The CHCS will be installed in 167 of the 168 DoD hospitals, 577 clinics and 20 other medical support facilities. Although modifications to the planned deployment schedule have been made as a result of the GAO concerns and recommendations, no significant impact on hardware deployment goals is anticipated.

Question. How much is being requested in FY 1987 to procure CHCS equipment?

Answer. The FY 1987 request includes $32.9 million for the purchase and installation of CHCS equipment.

Question. Do you anticipate delays in the CHCS acquisition process as a result of incorporating changes in the strategy to which you have agreed with GAO as a result of its recent report?

Answer. Yes. The deployment phase will be delayed by three months.

Question. What impact will delays in deploying CHCS hardware have on the need for FY 1987 funds?

Answer. The slippage has minimal impact on CHCS costs in FY 1987. The current estimate reflecting the revised strategy is $54 million for operation, maintenance & equipment, versus the original FY 1987 Budget Estimate of $59 million. However, this reduction will be more than offset by the requirement to provide additional interim support for the DoD Automated Quality of Care Evaluation Support System (AQCESS).

Question. How does DoD intend to measure cost-effectiveness of the CHCS system development?

Answer. TRIMIS has followed DoD Life Cycle Management guidance in the preparation of cost-benefit analysis. TRIMIS prepared a

Preliminary Economic Analysis of CHCS in preparation for the Milestone I decision. This economic analysis will be updated at succeeding milestone decision points. The benefits of the CHCS are derived from past experience with automated medical information systems and expected benefits which have been documented. The costs of the system will represent full life cycle costs, including contract and other Government incurred expenses.

Question. Provide for the record by Service its system of internal controls used to ensure that microcomputers used in its medical treatment facilities do not supplant or compromise standard DoD automated medical information systems.

Answer. The following information was provided by representatives from each of the military departments.

Department of the Air Force Data Project Directive (DPD) HAD-MSC-048, dated 19 Feb 1981, Interim Microcomputer Systems Support for Medical Treatment Facilities, provides policy guidance and directs the tasks required to acquire interim Automated Data Processing (ADP) microcomputer support for Air Force Medical Treatment Facilities. The DPD specifically identifies functional areas which may be supported through acquisition of interim microcomputer systems. Those interim systems which exceed predefined hardware requirements or that support functional areas other than those identified in the DPD require approval of AFOMS/SGS, AF/ACO, and the TRIMIS Program Office.

The Commander, Naval Medical Command has issued written policy covering the acquisition and use of microcomputers in Navy Medical Treatment Facilities. Systems exceeding the limits specified in this policy require submission of system decision papers to the Naval Medical Data Services Center for review and approval. Local and intermediate commanders and their Information Systems Executive Boards are responsible for monitoring systems to prevent the proliferation of prohibited systems.

Department of the Army (DASG-AMZ) letter, dated 22 March 1984, Subject: Policy for Approval and Implementation of Automated Information Systems, provides policy guidance and directs the procedures for the approval, development, acquisition, implementation and management of microcomputer support for Army Medical Treatment Facilities. Other guidance is found in Army Regulation 18-1, and Technical Bulletin 18-100. Requirements for systems exceeding these limits are forwarded through Army command channels to Headquarters, Department of the Army for review and approval. All systems implemented under this guidance are considered interim and will be replaced when standard systems are available.

Question. What internal controls exist in each Service to ensure that microcomputer programs used to support direct patient care are appropriately validated to ensure that information output is correct?

Answer. The following information was provided by representatives from each of the military departments.

Air Force Regulation (AFR) 700-26, Acquisition and Management of Small Computers, dated 30 Apr 1986 (draft has been distributed, regulation is currently being printed) requires life cycle management of software programs developed on small computers.

One of the functions of life cycle management is "ensuring testing and validation of the software." Prior to publication of AFR 700-26, AFR 300-3, Management of Small Computers, dated 6 Jan 1984, provided Air Force guidance on quality control requirements for application programs developed on microcomputers.

AFR 300-3 requirements for quality control of software is currently an item in the Medical Inspection Guide used by HQ Air Force Inspection and Safety Center (AFISC)/SG, Norton Air Force Base California, during their inspections of medical treatment facilities. With the publication of the new AFR 700-26, new items will be prepared and fowarded to AFISC/SG.

Microcomputer systems at the Navy Medical Treatment Facility level are continually monitored through appropriate functional and technical representatives. Microcomputer programs supporting direct patient care are subject to ongoing functional and technical configuration processes, including the monitoring and review of output information.

Army controls are defined in Department of the Army Technical Bulletin 18-102, "Army Automation Quality Program", and 18-104, "Testing of Computer Software Systems".

In summary, there is a clear need for an active quality control effort in the area of DoD medical microcomputer support systems. The DMSSC plans to initiate a quality assurance program in this area in FY 1987.

Question. What is the estimated CHCS life cycle estimate? Is it measured using the life cycle definitions required by OSD life cycle management regulations?

Answer. In order to promote competition for this procurement and allow vendors to bid the technical solution which they could best support, the CHCS Request for Proposals did not mandate a specific equipment configuration. Accordingly, the estimated life cycle cost of CHCS ranges from $800 million to $1.1 billion, depending on degree of regionalization proposed by the successful vendor. A completely regionalized approach is estimated to be the least expensive; a decentralized approach is the most expensive. Both estimates are consistent with Department of Defense directives and instructions on estimating life cycle cost.

Question. Explain how CHCS workload estimates were defined and sized?

Answer. Based on general workload data and other factors provided by the military departments, such as type of facility, functions supported, and location, sites were assigned to one of 22 categories that covered the spectrum of all sites. For hospitals, we looked at both operating beds and clinic visits. For clinics, category selection was based on visits, functions supported and location. For the initial evaluation phase, a site was chosen to represent each category. Terminal placement criteria were developed by each service for each representative category. This information was provided for planning purposes only, so that each offeror would be bidding on the same criteria.

For the competition phase of CHCS, additional physical and workload data collection has been initiated to provide workload data for the median and largest site in each category of facilities. An additional category has been added for the largest hospitals, to better represent their requirements. In conjunction with these studies, an update to the terminal placement criteria will be performed. This additional data will be provided to the vendors involved in the competition "fly-off".

Question. If CHCS contractor cost estimates exceed the budgeted funds, what actions will the Department take to remain within available funds?

Answer. In June 1986, firm costs for the CHCS extended benchmark test and estimated costs for the CHCS deployment will be available. Firm costs for CHCS deployment will not be available until July 1987. The CHCS contracting office has cautioned that major program decisions should not be made based on estimated data. However, DoD will make contingency plans for CHCS based on these costs. In the event that cost estimates exceed budgeted funds, DoD will reassess the cost-benefit of CHCS. Based on the cost and estimated benefits associated with providing CHCS support to various medical treatment facilities, it is likely that some sites will be eliminated. Also based on the cost evaluation, it is possible that some functions which had previously been determined to have low cost-benefit ratios will be found no longer cost beneficial and will be eliminated.

FOREIGN MILITARY SALES FINANCIAL MANAGEMENT IMPROVEMENT PROGRAM (FFMIP)

Question. The Defense Department manages a $170 billion foreign military sales program with 80 countries. Numerous GAO and Department audits have criticized management of the FMS program. In 1980 and again in 1982 the Committee instructed the Department to centralize FMS accounting and disbursing activities. OSD established the FMS Financial Management Improvement Program to accomplish this objective.

Mr. Springett, please explain the recent cost growth and schedule slip in the fielding of the FFMIP.

Answer. First, it should be pointed out that the FFMIP was created subsequent to an evaluation of a test of centralized disbursing and accounting procedures, which determined that these methods were not cost effective. The answer to the specific question is in two parts:

(a) Schedule. This refers to a three month delay for the initial operating capability (IOC), not program completion. The main reason is that competitive award of the development contract for the FMS Accounting and Billing System (FABS) took longer than anticipated. The slippage is actually somewhat shorter than the delay experienced in this procurement action.

(b) Costs. The overall FFMIP cost estimate has increased from $34.2 million to $43.6 million since Milestone I, Concept Approval:

[In millions of dollars]

Explanation	*Increase/decrease*
The FABS cost estimate was increased as the scope of the project became better defined during design. This change also includes DSAA's share of costs that were previously not allocated to the Components	+7.5

The Air Force conducted a parallel study which made over 100 recommendations for improvement of Air Force FMS systems, policies, and procedures. It became evident that it would be difficult and inefficient to attempt to keep these Air Force initiatives separate from FFMIP initiatives. Accordingly, the decision was reached in September 1985 to include all Air Force costs for the development of its Component system under the FFMIP umbrella. This total also includes the Air Force's share of costs that were previously not allocated to the Components	+10.7
This represents an increase in the Navy's developmental costs and the Navy's share of costs that were previously not allocated to the Components	+4.0
This represents the Army's share of costs that were previously not allocated to the Components	+1.2
Refined FFMIP Office costs for program management and technical integration added $2.9 million	+2.9
Detailed cost information was available which resulted in the assignment of previously unallocated costs to the Components	−16.9
Net Increase in the FFMIP budget	+9.4

Question. What effect will the determination to have DLA design and implement its own financial integrated control systems to interface with each military service have on the Initial Operating Capability (IOC) date of January, 1987 and the estimated fully completed date of May, 1988?

Answer. DLA is not designing its own FMS Integrated Control System (FICS). The MILDEPS FICS will edit, process, and transmit the full range of financial transactions to and from the SAAC. These Service transactions include case and case line level structures, dollar amounts, creation of budget authority, release of obligation authority, reports of commitments and obligations, expenditure authority, disbursements and performance. The DLA requirement is not a separate FICS but merely an interface into the MILDEP FICS for expenditure authority. Within DLA there are nine DCASRS which administer and disburse on contracts of all kinds including contracts with FMS lines. Each DCASR has a unique disbursing station symbol number (DSSN) for each MILDEP so that disbursements can be made within the expenditure reporting system of each MILDEP. This gave rise to a requirement for one standard way for each DCASR to request expenditure authority through any MILDEP FICS. The integration contractor for the FFMIP has been tasked to standardize this requirement for DLA. In the meantime, the Army will continue to support DLA as they have in the past (for all the MILDEP's) through their system.

Question. What is the current status of DLA's design efforts?

Answer. DLA has completed an analysis of the requirement. A DLA statement of work (SOW) will be prepared in April 1986. The FFMIP's test and integration contractor will be tasked to do the design and development described in the SOW. As indicated in the previous question and answer, the interface(s) will enable DLA DCASRs to request expenditure authority through the MILDEP FICS.

Question. Will DLA meet its milestone dates?

Answer. The standard expenditure authority screen is required by October 1987. This milestone will be met.

Question. Why has the Navy not met FFMIP milestone dates?

Answer. Navy FFMIP progress is linked to a hardware modernization project at the Navy site which supports the Navy FICS. This necessitates a concomitant conversion to new hardware and development to FFMIP specifications. Accordingly, the Navy milestones, as approved by the MAISRC, for full FICS specifications are planned to occur later than for the Army and the Air Force.

Question. What steps have you taken, Mr. Springett, to ensure that the Navy financial integrated control system will be operational when necessary?

Answer. Management controls are the same for all proponents. Each of the proponents is signed up to the milestones as specified in the approved System Decision Paper and agrees to report any scheduling problems that may develop. Also the FFMIP conducts quarterly in process reviews (IPR) with each proponent and holds quarterly meetings with the Executive Committee to review progress. Finally, critical milestone deliverables are closely reviewed as they occur. For example, detailed Navy plans will be reviewed upon delivery in May 1986.

Question. What steps have been taken to ensure that the data bases contain accurate data to enable the Security Assistance Accounting Center (SAAC) to provide proper accounting and control over foreign customer funds and timely reporting of FMS transactions, once the new system is implemented?

Answer. The main steps or initiatives are: development of detailed conversion plans by SAAC and the MILDEPS which will validate existing data and upload the FABS data base; development of standardized data elements and transactions; up front edits in the MILDEPS FICS; 100% feedback of all transactions with accountability as to status of transactions: in transit, processed, or suspended; inclusion of accounting dates and shipping dates as data elements to facilitate synchronization of data base snap shots at points in time; and formalized reconciliation at monthly intervals.

Question. GAO has indicated that some of the military services may not realize the amount of estimated cost savings to justify the funds spent on fully implementing the Financial Accounting and Billing System (FABS) and the services' financial integrated control systems. Provide the initial and current cost savings by system and explain significant differences.

Answer. The short answer is that each proponent shows increased outlays in FMS Admin Funds over an eight year life cycle. And, of course, FMS Admin is paid by our customers. Thus if the system improves the identification of costs to be billed and prevents the use of U.S. cash to pay FMS bills we will have accomplished a critical objective. The FFMIP focus has been on overcoming financial system deficiencies, in prudent and realistic ways, but not necessarily in a way that yields direct savings in administrative costs. The FFMIP approach has been to find cost effective solutions. On the other hand, these initiatives do reduce projected operating costs in the out years. Exhibit 1 demonstrates these relationships.

COST TRACK - TOTAL BY SERVICE

CONSTANT $ X 000

ORGANIZATION	85	86	87	88	89	90	91	92	TOTAL
DSAA	726.5	10,321.2	3,365.8	-164.8	-164.8	-164.8	-164.8	-164.8	13,589.5
ARMY	79.0	2,498.0	357.0	-175.0	-175.0	225.0	225.0	225.0	3,259.0
NAVY	308.0	6,463.0	4,141.0	678.0	-423.0	-684.0	-966.0	-1,117.0	8,400.0
USAF	362.0	7,154.8	4,118.7	2,560.9	1,803.0	357.5	-171.1	-699.8	15,486.0
FFMIP	1,259.0	842.6	778.9	0	-	-	-	-	2,880.5
TOTAL*	2,734.5	27,279.6	12,761.4	2,899.1	1,040.2	-266.3	-1,076.9	-1,756.6	43,615.0

EXHIBIT-1

*NOTE: Dollar amounts may not add beyond the decimal position due to rounding.

Question. For years, the reporting of deliveries and cost of FMS material and services by the military services to the SAAC has been untimely and inaccurate. One of the major improvements sought by the Committee is the uniform financial and logistical reporting to the SAAC so that reconciliations of delivered values with trust fund expenditures can be performed on a line item basis. Please outline the steps taken to date and disclose additional actions needed, including completion dates, to implement the Committee's direction.

Answer. The FFMIP concept and specifications meet this system deficiency head on:

Disbursement Integrity—The main contributing factor to this problem was that the trust fund accounting system, Defense Integrated Financial System (DIFS), never really got Treasury disbursements fully reported to FMS cases and case lines until case closure. In some instances, disbursements were imputed on the basis of logistical delivery information. The new accounting system, FABS, records actual disbursements to FMS case and case line level.

Accounting Month Integrity—The DIFS accounting month is based on the transaction processing date and not the disbursement date. Accordingly, the submissions in any particular month may have included business from previous months and probably did not include all current month business. Thus no snapshot could be taken at monthly time intervals and effect accurate reconciliations. FABS specifications will allow identification of the correct accounting month.

Data Transmission Integrity—Data transmission discipline was lacking in the past. The FABS/FICS architecture dictates: up front edits; 100% accountability of transactions that are in transit, accepted, or suspended; and Departmental visibility over suspended transactions to ensure that errors are corrected.

Summary—The above cash expenditure specifications relate directly to U.S. Treasury reports month by month. Other specifications require the reconciliation of logistical performance to financial transactions at FMS case and case line level within the general ledger account structure we have designed.

AIR FORCE LOGISTICS COMMAND MODERNIZATION

Question. AFLC has stated that LMS will contribute to improved weapons system mission capability. What are the readiness goals and objectives associated with the improved capability? How will the modernization contribute to achieving the stated goals and objectives?

Answer. When evaluating the relative merit/worth of information systems which provide direct support to combat forces, AFLC must identify the improvements that these systems provide in logistics itself. To accomplish this, AFLC has broken down its basic functions into logistics processes. Each process was evaluated for deficiencies and objectives were identified to correct deficiencies. Information technology provides leverage in all aspects for operational support. Using modernized management systems, we will realize increases in operational readiness rates, maintenance efficiency, and spare parts availability. These factors all add to higher probability of mission success. The objectives for each process are:

Process and *Objectives*:

Requirements: On line simulation; Wartime oriented processes; Computed by weapon system in addition, to items; and Accurate historical data.

Acquisition: Procurement status visibility; Reduce procurement lead times, MILSCAP compliance; Improve spare parts pricing; Command funds tracking/execution; and Automate documentation.

Custody: Track material process; Comply with package/preserve requirements; Interface with standard Air Force supply systems; and Reduce storage discrepancies.

Allocation: Align distribution with requirements; Correlate material to budget; Earlier release of backorders; Asset data on-line for item managers and system managers; Shorten logistics pipeline; and Real-time requisitions and status.

Movement: Increase surge capability; Immediate response to diversions and cancellations; Improve theater depot operations; Improve management of second destination transportation funds; and Terminal visibility of inbound/outbound cargo.

Maintenance: On-line transaction processing; On-line data interrogation; Assess availability of resources, assets and materials; Visibility of budget, pricing, and sales; Provide work load forecasting; Reduce overhead and direct labor costs through better work load balancing; Increase standardization of material deficiency processing; Provide specialized Material Deficiency Report (MDR) support for combat units; Provide analysis/trend failure data to item managers, system managers, and equipment managers; Provide Foreign Military Sales (FMS) source data; and Provide modeling for system managers and equipment managers.

Improvement: Provide modification effectiveness tracking; Increase serial tracking; Increase AFLC organic technical order maintenance capability; Reduce technical order processing, printing, and distribution time; Automate receipt, storage and distribution of engineering drawings; Automate bid set preparation; Extract executive level weapon system information; and Provide telecommunications with field commanders.

Decision Support: Rapidly prepare summary information; Wartime logistics assessments; and Improve wartime capability through problem item resolution.

Each of the listed processes have serious deficiencies that greatly impact the function of AFLC and the service that it provides to all major air commands. Each improvement is expected to increase the combat readiness and mission capability of all weapon systems.

The improvements associated with Requirements Data Bank (RDB) concetrate on improved readiness through more accurate requirements forecasting. This approach increases the probability of the right part being at the right place at the right time. To accomplish these objectives, RDB will maximize weapon system readiness capabilities by the establishment/adjustment of the procurement and repair program, individual item buys, and repair actions. Combat support will be improved by allocating resources against weapon system operational targets rather than item fill rate/backorder goals as used in today's system.

RDB will improve strategic level planning by using analytical and decision models to define and evaluate logistics resource alternatives for the planning, programming and budgeting system process. The Air Force will be able to achieve an overall improved balance of capability by comparing the results of various alternatives and accurately predicting long-range logistics resource requirements under each alternative. System improvements will provide interactive file maintenance and continuous computation capability which will improve the accuracy of the budget/POM forecasts. Item managers will be able to review the impact that changes have on actual computed requirements and current buy-and-repair action.

The acquisition process improvements will be met by the implementation of the Contracting Data Management System (CDMS). The system will provide real-time status of spare parts on contract by weapon system. This will enable program managers to accurately identify spare part delivery schedules, so critical assets may be allocated effectively. CDMS will provide the capability to react to wartime surges and work load shifts. This translates into minimum disruption in the logistics pipeline and sustained support of combat operations. Additionally, the system will provide buyers, price analysts, and managers on-line access to price histories, detailed spare part cost information, and on-line statistical analysis and modeling capability. These capabilities will improve spare parts pricing. CDMS complies with DOD MILSCAP standards which will improve interservice contract administration and data integrity. The system will reduce processing lead times by automating the purchase request coordination process and eliminating manual interfaces on the current systems. These gains will help improve lead time growth associated with recent legislation and changes in procurement law.

The custody and allocation process improvements and some of the movement process improvements will be met upon implementation of the Stock Control and Distribution System (SC&D). The primary objective of the SC&D project is the increased operational readiness of Air Force units. This objective is achieved by major improvements in order and ship time, asset visibility, and manpower utilization. Conservative studies, using validated logistics models, have shown a 12-hour reduction in order and ship time could result in an additional 107 aircraft equivalents. The 107 aircraft represent an increase in operational availability of those aircraft which would otherwise be down awaiting parts. This improvement is significant to the overall Air Force readiness posture. Included as another operational benefit is the timely asset visibility created by an on-line data base. Accurate asset information provided to field units will result in better balance of maintenance actions, avoiding operationally costly remove-and-replace activity.

The Enhanced Transportation Automated Data System (ETADS), with SC&D, will provide movement process improvements. The major improvements of ETADS are directly related to combat capability/readiness, improved weapons system support, and functional mission capability. The program will improve Air Force readiness capability by collectively maintaining essential transportation movement information in a single repository. This information will enable the Joint Deployment System/Agency (JDS/JDA) to monitor and coordinate resupply movement requirements during contingency, operation plan, or wartime execution. ETADS redesigns, integrates, and upgrades logistics management systems which operate at HQ AFLC in support of the defense transportation system. The program provides improved capability for centrally managing and controlling assets moved via LOGAIR and scheduled truck systems. It improves system response time, replaces manual processing used to support Department of Defense documenting standards, and enables management to control movement of Air Force cargo throughout the worldwide airlift and sealift systems. ETADS provides direct management control over transportation finances to comply with Department of Defense directives and public law.

Maintenance process improvements will be obtained with the implementation of the Depot Maintenance Management Information System (DMMIS). The repair of recoverable assets is critical to operational effectiveness. DMMIS will reduce the amount of time required to report, access, and use system information. The goal is a 5% increase in productivity for system users. Basic maintenance reporting can consume up to 25% of a maintenance worker's time. DMMIS will reduce reporting and transaction follow-up time. Under current systems, most scheduling, material control, and production information is provided by 12 data systems which collectively generate over 300 different paper output products. When accessing information, considerable time is spent handling, searching, and storing these products. DMMIS will reduce the number of different data sources, the amount of time required to access informaton, and reduce paper outputs. On-line interactive capability will provide immediate answers to production scheduling questions such as status of parts, equipment, labor, etc., allowing the schedules to effectively react to changing requirements. This will provide the material expediters and other material handlers with immediate status of parts requests, issues, and turn-ins. This improved material visibility will reduce the incidences of incorrect material movement and improve material projections to ensure the right parts are in the right place when they are needed. Backorder information will also be available to material control and production managers.

The improvement process will be enhanced by the Engineering Data Computer Assisted Retrieval System (EDCARS). Engineering data are critical to the ongoing maintenance and supply support of operational weapon systems. EDCARS provides an automated storage, retrieval, and dissemination capability for this information. Direct benefits will be achieved by the broader use of engineering data for competitive reprocurement and engineering/maintenance actions.

The decision support process improvements will be obtained when the Local Area Network (LAN) and Weapon System Management Information Systems (WSMIS) are implemented. WSMIS improves the operational forces by providing assessments of weapon system readiness and sustainability based on logistics support posture. The system achieves this objective by highlighting logistics resource and/or processes which currently limit, or potentially limit, a weapon system's combat capability. This affords the Air Force logistics manager the ability to predict how well units can execute and sustain planned combat operations in a wartime scenario. It allows for a more efficient application of resources by identifying, in peacetime, those limiting factors which may affect a unit's ability to go to war. This allows time for corrective actions to take place prior to the time when resources are actually required. WSMIS has three modules: The readiness assessment module (RAM); the sustainability assessment module (SAM); and the get well assessment module (GWAM). The readiness assessment module provides quantitative measures of readiness as close to real-time as possible by acquiring and arraying weapon and logistics resource status information. RAM also identifies the resources limiting the readiness of AF units. The sustainability assessment module incorporates models to predict how well units tasked in war plans can generate their wartime taskings in terms of sortie generation capabilities and aircraft availability. SAM also identifies the logistics resource and/or processes that are limiting sortie generation capabilities. SAM will be used by all AF units to help determine combat ratings to be used in unit status reporting. The get well assessment module provides an integrated data base to assist managers in formulating alternative plans and strategies to overcome problems in RAM and SAM.

The LAN will enable terminal-to-computer and computer-to-computer communications within each AFLC Air Logistics Center. The LAN will provide the medium required to achieve the benefits of interoperability between the modernization programs. The immediate access to the broad range of logistics data will permit the assimilation of information needed to sustain peacetime readiness and to react to changing combat conditions. In addition, the LAN will enable an orderly transition from batch to on-line processing and reduce the need for continual relocation of base telephone cable.

STOCK CONTROL AND DISTRIBUTION AND REQUIREMENTS DATA BANK

Question. How do you plan to determine or measure the contribution of the Stock Control and Distribution and Requirements Data Bank projects towards the Air Force's ability to achieve this objective?

Answer. The contribution of SC&D and RDB will be measured against improvements in the logistics processes, the improvements these processes have in the readiness posture of the operational commands, and improvments in AFLC's capability to surge and support wartime operations.

The direct objective of the SC&D program is to increase the readiness posture of the USAF and its foreign customers by satisfying their logistics requirements in a more rapid fashion. This includes not only their peacetime support, but also the ability to surge during wartime and other contingency periods. Readiness is determined by a variety of factors, not all of which are under the direct control of AFLC. The AFLC SC&D system's direct contribution to readiness is the speed and quality of materiel support to operational bases and depot maintenance. There are many substantial improvements that can be made which will significantly enhance our responsiveness and readiness posture. These include improving the accuracy and timeliness of inventory control point (ICP) operations, storage distribution point (SDP) operations, support to organic maintenance, transportation planning and operations, and status information to our customers worldwide.

The Requirements Data Bank (RDB) will enable logistics managers to develop forecasts of logistics resources required to achieve specific weapon system readiness and sustainability goals throughout the POM period. The RDB will tie logistics resource requirements to specific weapon system support goals; it will insure that the various categories of logistics resources needed to support a weapon system are "balanced" for a given goal and it will insure that funds are allocated to procure the proper amount of expense items (bits and pieces) to fix the repairable spares that have been forecast to break during the same period. RDB must be able to quickly recompute requirements and determine buy and repair requirements by category in the POM process. It is important to be able to quickly adjust logistics strategic resource allocation decisions to changing circumstances. The impact of these decisions must be related to specific changes needed in buy and repair requirements for AFLC's assigned resources. The second major objective of the RDB is to develop a logistics operations and budget execution system to achieve the weapon system support goals that have been identified in the POM process. That is, the RDB must be able to drive procurement, distribution, and repair actions for engines, support equipment, expense and repairable items that are consistent with the weapon system support targets. The distribution, procurement, maintenance, and modification actions must be "orchestrated" to be consistent with those goals. The specific item mixes that were developed in the POM submission will probably not be the same mix of items that are purchased and repaired because certain logistics factors which drive buys and repairs, such as failure rates, cost, and lead times will have changed over time. These changes will have an impact on the specific product mix in terms of buy and repair actions that are executed in a budget year; but, the budget execution activity that occurs some years after the POM submission must be targeted for the same weapon system support objectives that were the basis for the POM submission. If the changes in item factors in this time interval have a significant impact on the cost to achieve the weapon system support target, RDB will notify management of this change and decisions to reprogram funds or lower the support target will be made.

Question. How will you identify: (1) What is to be measured, (2) How will you measure it, (3) How you will quantify this into mission capability or some other measurable type of benefit?

Answer. (1) The procedures that will be used to identify evaluation criteria and measure the project's success will be a checklist of baselined requirements which will be applied to the operational system by the project office or an Independent Validation and Verification contractor. To the extent possible these criteria will be addressed up-front in all modernization program's hardware and software requests for proposal to ensure evaluation measurement that is dependent on system design is incorporated. Those items not meeting this criteria will be corrected before acceptance is granted.

For SC&D, AFLC is looking to improve asset visibility to the item managers. At the present time we lose up to two days time on posting local receipts and having this asset information input into the item manager allocation system. Base level asset reporting can take up to three days to be received and input into the allocation system. Item managers can query for asset balances, but are limited to the last cyclic computer data stored on a disk. Under SC&D, the asset receipt data and base level asset reporting will be input into the system upon receipt. The successful implementation of SC&D with real-time interrogation capability will verify this objective. Assets will be processed on a near real-time basis rather than having to wait for processing cycles to occur.

Within RDB, the weapon system availability data will be tracked throughout the POM cycle. The targets will be decomposed into specific item targets which will be managed at depot level.

(2) The assessment as to whether or not stated benefits for any modernization program are fully achieved will involve evaluating the system's implemented capabilities to measure how well the operational system satisfies the end-user needs and whether all objectives stated in the requirement documents and the functional descriptions were met. Once this has been determined, expected benefits will be measured against each objective (to the degree that a particular objective has been achieved) to assess the actual benefit achieved. This will be accomplished for stated tangible and intangible benefits.

Shortening the order and shipping time (O&ST) on customer requisitions will be a measure for SC&D. At the present time, requisitions are held up to 24 hours awaiting input into the allocation system; the allocation and distribution systems require six to nine hours to process the requisitions and create shipping tickets; one or more days are lost on processing computer exceptions and about two days are lost in system interface times between inventory control point (ICPs) and non-collocated storage distribution point (SDPs). Under SC&D, requisitions will be processed upon receipt; exceptions will be cleared on-line; SDP to ICP interfaces will be made in seconds/minutes; and SDPs will be able to release items for shipment upon demand. Verification of O&ST improvements will be made through internal AFLC pipeline measurement products and the MILSTEP series of pipeline reporting.

The Air Force has data systems which will feed RDB with the information required to compute resource requirements for alternative weapon system support objectives. These systems provide information on base stock levels, item demand rates, item repair times, etc. One of the most important contributions of the RDB is to take this item specific information, and using the RDB application and indenture file, relate how this "feedback" information influences weapon system logistics resource requirements. These requirements are determined by using operations research modeling techniques like the LMI Availability Model.

(3) RDB establishes peacetime and wartime stockage levels and depot repair schedules for the resources that are centrally procured, i.e., repairable spares, engines, expense items, and support equipment. To establish these requirements, a weapon system computation is executed. During a weapon system computation, all of

the item information related to that weapon system is used in a mathematical model which determines the appropriate buy and repair requirements for a specific weapon system support target. Once that computation has taken place, RDB provides the item manager with specific item fill rate or other management targets as necessary for that item to yield the given weapon system support target. In addition, RDB provides the item managers with financial thresholds which are upper bounds on the buy and repair dollars that he cannot breach without obtaining higher management approval. Today, local ICP/SDP managers are dependent upon "old" data from the last computer cycle to make decisions. Retail customers at AF bases receive status that is several days old. Audit reports have pointed out conditions where not mission capable supply (NMCS) items are actually received at the base prior to receiving the shipment status. Under SC&D ICP/SDP supply managers will have the ability to obtain up-to-date information either upon query action or through real-time system outputs. The successful implementation on SC&D with on-line processing will verify this objective. On-line processing and immediate access to the most recent computer updated records will provide more responsive and accurate decision data.

Question. Provide specific terms, such as numbers of aircraft, reduced cost per aircraft, reduced requirements for spare parts funding, etc.

Answer. The principal objective of the SC&D and RDB programs is the enhancement of Air Force readiness through improved logistics support. As reported in the Requirements Data Bank (RDB) Economic Analysis, the increase in aircraft availability is estimated to be 175 aircraft equivalents.

With an on-line transaction driven SC&D system, the time to process a requisition (order and ship time (O&ST)) can be reduced and material provided to the requisitioner faster. SC&D forecasts a reduction of 12 to 26 hours in O&ST. The 12/26 hour reductions were input to the Logistics Management Institute Aircraft Availability model and readiness improvements projected in the form of an additional 107 aircraft equivalents. These aircraft equivalents were then related to intangible dollars in the amount of $3.653 billion.

A reduction of 12 hours O&ST will result in a tangible savings of $14.4 million dollars in BP 1500 recoverable spares. Obviously, greater savings will accrue if more than 12 hours are saved by implementation of the SC&D system.

Question. How will the Air Force track and measure each of these improvements?

Answer. At periodic intervals in the RDB development, we will use analytic models to evaluate the impact of RDB on weapon system support objectives and resultant logistics resource requirements. The models will be used to compare the RDB approaches with the previous approaches used in material requirements processes. The successful development of the SC&D system and satisfaction of the functional objectives will be measured through improved statistics in a variety of end of day and end of month management products.

The measure of specific achievement of user requirements as the contractor progresses through the development phases is achieved by requiring formal reviews of his development at key points. The Air Force information system specialists and user personnel, as well as our independent verification and validation (IV&V) contractor, participate in these reviews. One of the primary considerations at these reviews is the assurance that the specific features desired by the user as specified in the functional description documentation are being provided for in the contractor's subsequent development, test and implementation documents (systems specification, data base specification, program specification, test plans, and users documentation). In addition to these formal reviews, the Air Force and IV&V contractor personnel will conduct informal walk throughs to evaluate the contractor's work. Audits will be conducted by the IV&V and AF personnel. The preliminary functional/physical configuration audit (FCA/PCA) is held prior to the product verification review (PVR) for each subsystem. The FCA is conducted to examine and evaluate the contractor's integration test procedures and results to find out whether each subsystem conforms to the approved specification and functional description. The PCA compares the coded subsystem with the technical documentation and standards. The final FCA/PCA is conducted for the same purposes following the validation test for the subsystem.

A validation test of each subsystem will be conducted by a user test team with support of the IV&V contractor. This test validates that the requirements and functions described in the functional description and system specification have been met and that the subsystem is usable, operable and maintainable. This is accomplished by demonstrating that the performance meets required criteria in as nearly an operational environment as possible.

Baseline control procedures will be used by the program office to track performance, program costs and schedules, performance of functional requirements and esimates of anticipated benefits. The key elements of information will be baselined and all changes controlled.

A requirements tracking matrix (RTM) has been developed and implemented which will provide the SPO, AFLC mission specialist, independent verification and validation (IV&V) contractor, and other personnel with the capability to assure compliance with the contractual requirements. This capability is achieved by developing and preserving audit trails for specific systems elements that can be tracked throughout the system life cycle. Performance requirements in the contract are identified and are measured by the IV&V contractor during validation testing. In addition, tangible and intangible benefits in the economic analysis (EA) and deficiencies that can be quantified and identified to specific logistics functions.

An analysis of the current environment is being conducted by the SC&D support contractor and validated by the user community. Another analysis will be conducted prior to implementation of each phase of SC&D, as well as after implementation, to determine the net effect of each projected benefit. Specifically, for the pilot project, which is the first phase of SC&D, there are 190 functional requirements in the SC&D functional description. These are grouped into 40 logistics processes or chains. These are then identified to five major benefits: (1) increased speed of activity; (2) reduce costs; (3) reduce errors; (4) improve management planning or control; (50 increase flexibility. The processes are also identified to over fifty low level benefits. For example, the first chain is the processing of a requisition. The measurement methodology to be employed is to analyze existing reports that collect requisition processing times by priority. A format containing number of requisitions, hours and minutes to process, priority, location, Air Force standard, average Air Force days to process, SC&D days to process and accrued savings is developed and input to the RTM for comparison with current performance data.

Question. Who will be measuring and validating the benefits?

Answer. The Air Force will measure the weapon system operational benefits as part of the final operational evaluation (FOE) process and will track weapon system performance as part of the system design. AFLC has certified the benefits of the programs as documented in the economic analysis. The benefits to be measured and validated in the RTM will be accomplished by the AFLC mission organization (user) with assistance from support contractors.

Question. When do you expect to report on resultant measurement?

Answer. For RDB, the first FOE to address weapon system operational benefits will be rendered at the completion of LAG 4. After each phase has been successfully implemented at all sites, a measurement of each applicable benefit will be reported. For SC&D, the pilot project will finish implementation at all sites by August 1987 and will provide an initial measure of benefits attained.

FRAGMENTATION OF SYSTEMS

Question. Five of the ten logistics management systems modernization projects exceed the MAISRC dollar thresholds for review. Yet, the committee understands that all ten are reviewed and approved at the same time even though each project is at a different stage of development.

Mr. Springett, why have you chosen this procedure?

Answer. This procedure assures OSD that a systems approach is being taken to all aspects of logistics systems modernization at AFLC and that systems engineering and integration attention, which is critical to program success, is being applied both inter and intra system. This approach povides confidence that overall logistics deficiencies are properly identified and that new, not just recoded, applications are designed to meet the newly structured functional business processes of the command.

Question. Does this procedure provide adequate management control over AFLC?

Answer. Yes, the established oversight process provides adequate management contol over AFLC. The MAISRC conducts semiannual In-Process Reviews (IPR) of the program to include coverage of the progress of each of the ten projects. The last IPR was conducted February 4, 1986 by the MAISRC and the next MAISRC review is scheduled for August 1986. In addition, the MAISRC receives formal quarterly progress reports on the program and each of the ten projects. Furthermore, each of the ten projects receives milestone decision review by the Headquarters Air Force senior executive review body, the Automated Information Systems Acquisition Review Council (AISARC). For example the next milestone decision to be made by the AISARC is a Milestone II decision on the Stock Control and Distribution project scheduled for June 1986.

Question. Why should each of the ten projects not be judged on their own merits?

Answer. This approach assures that the overall program is properly planned, structured, and managed. Within that framework, it also permits for each project to receive its appropriate level of review and decision authority. Failure to address all of the modernization efforts in context could lead to future difficulties in assuring interoperability of projects. It should be noted that progress of each project is still reviewed by the MAISRC and the Air Force also performs Milestone decision reviews on each project.

Question: We understand that there have been testing anomalies and cost overruns of the first two projects. Under what conditions would OSD revoke its delegation of oversight authority for the Air Force logistics modernization program?

Answer. The conditions or critieria for revoking oversight authority are contained in ASD(C) memorandum of April 2, 1986, Delegation of Oversight Responsibility for Automated Information Systems. The criteria are as follows:

1. Program cost growth of 25% or more has developed for the overall program.
2. Program schedule slippage of six months or more has developed for the overall program.
3. The headquarters executive level review process, as required by DoDD 7920.1, has not been adequate.
4. Available program funding is significantly below approved program requirements, making the approved program unexecutable.
5. Significant problems develop in the execution of the acquisition strategy and associated procurement actions.
6. Program planning or execution is in conflict with established DoD policy.
7. Other significant issues have developed which remain unresolved and which jeopardize the success of the program.

Question. Why are the other Services logistics modernization programs not treated in an identical manner?

Answer. While possessing some common elements, each modernization program usually has unique requirements, acquisition strategy and program structure. In many cases not all logistics functions are undergoing upgrade at the same time, i.e., distribution, maintenance, stock control, etc. The Life Cycle Management model is flexible and capable of being tailored to the needs of each system and therefore, does not rigidly and commonly structure each program. To our knowledge, the other services have not surfaced a requirement to redesign all fundamental logistic processes to the extent existing at AFLC.

INTERIM ADP PROJECTS

Question. In addition to the ten major ADP projects in the logistics modernization program, AFLC has over 100 other ADP modernization projects. Mr. Springett, what assurance can you give the Committee that all of these "interim" projects are well-coordinated and needed?

Answer. Based on current procurement documentation, there are less than 30 active system acquisitions which could be labelled "ADP modernization." The major LMS Modernization Program is a long-term effort aimed at AFLC's core logistics functions. Many will not be completely operational until the late 1980's or early 1990's. Because of this, AFLC undertook some interim fixes to current batch systems in 1982. These fixes were accomplished under a program called Near-Term Initiatives. Most of the 16 NTIs were completed in FY84, and the remainder will be complete by September 1986.

Also, within AFLC, there are other projects underway that fall outside the core logistics functions and the modernization program. These activities are needed to keep pace with the introduction of new systems such as the Peacekeeper, improving our visibility of the nuclear inventory, improved support to numerical control equipment, improved technical order management, and others.

To insure these systems are well-coordinated and needed, AFLC has established a third party validation organization. This organization makes an independent assessment of the logistics needs before any action is taken on the new project.

Question. Why spend money on short term fixes?

Answer. The near-term initiatives enabled AFLC to make some immediate improvements to current batch system operations. These improvements were necessary for day-to-day operations and to bridge the gap until the modernization programs become fully operational.

Question. How much is budgeted by fiscal year and appropriation for AFLC interim ADP upgrades in each fiscal year 1985 to 1987?

Answer. Most Near Term Initiatives were completed and installed in FY 84 and the expenditures in FY 85 through FY 87 are maintenance costs. All development and acquisition funds were expended by FY 84.

AFLC is, however, expending funds in FY 85-87 on programs that fall outside the modernization efforts. Procurement dollars reflect latest position which includes Gramm-Rudman reductions.

[In thousands of dollars]

Project	Appropriation	1985	1986	1987
Peacekeeper Missile	3400	0	188	0
	3080	1,337	0	0
Nuclear Ordnance Logistics System	3400	43	225	268
	3080	1,617	0	0
Tinker Data Service Center	3400	2,728	2,091	2,405
	3080	115	0	329
Authorized/Assigned Resource Management System	3400	0	432	464
	3080	1,672	0	0
Comprehensive Engine Management System	3400	4,428	3,622	6,555

[In thousands of dollars]

Project	Appropriation	1985	1986	1987
	3080	486	0	0
Automated Warehouse System	3400	0	598	3,291
	3080	267	0	0
Automated Technical Order System	3400	2,755	4,478	7,890
	3080	4,084	20,418	7,139
Reliability and Maintainability Information System	3400	1,973	9,288	5,632
	3080	0	0	16,511
Worldwide Military Command and Control System	3400	816	438	576
	3080	846	0	0
Central Procurement Accounting System	3400	0	2,700	1,570
	3080	0	0	3,435

DATA ACCURACY

Question. What has AFLC done to assure that the data in its current systems, which number over 500 systems, is accurate and that bad data will not simply be proliferated into the new systems?

Answer. The AFLC unique data systems have system edits with established criteria governed by regulation for acceptance or rejection of system data. Assessments of data accuracy on some systems occur frequently, even daily. These may be done by AFLC, government auditors, or independent contractors. Air Force Inspector General personnel are charged with making accuracy assessments, as well. Some of the daily assessments are limited to the review of exception reports, others involve an item-by-item accounting of assets, and the remaining are confirmed by statistical sampling. Data errors that exist today are, for the most part, a result of obsolete software and inadequate computer resources that do not provide the command any excess computing power for multiple processing cycles that are needed to maintain data files. Batch processing also produces conflicting results when data in one file have been updated, but duplicate data have not been updated.

Batch oriented processing makes maintenance of information difficult, time-consuming, and data less accessible. The new on-line data systems will reduce, and in some systems, eliminate data errors. Accuracy is being designed into the modernization systems; i.e., data error checks built into software provide screen edit capability at the data source to reduce input error. The new systems emphasize data as a resource that can be managed more effectively and with greater efficiency, which will also reduce hardware saturation. On-line directories of data ensure immediate updating and maintenance capability and prevent redundant data that produce inconsistencies and inaccurate management indicators. The new data systems require data standardization that will dictate timeliness and accuracy, as well as control and coordination.

Question. When was the last time they were tested for data accuracy and completeness?

Answer. Data accuracy in many systems is reviewed daily by personnel resolving exception notices, error listings, and through the review of transaction history reports. Each of the AFLC unique data systems that update or otherwise modify master data files perform data accuracy checks cyclically. The frequency of the update cycle is different for most of these batch systems and governed by regulation. The accuracy checks vary from weekly to quarterly, depending on mission requirements.

Question. Mr. Springett, why doesn't the MAISRC require the Air Force to ensure that data is accurate before making new systems operational?

Answer. Our policy requires that Information Resources Management procedures be in place within the components to assure that information that sufficiently meets the need in terms of availability, accuracy, timeliness and general quality is available to support DoD operations and decisionmaking. Further, our policy requires that AISs be field tested using actual functional transaction data and then be certified for adequacy prior to operation. These are part of our Life Cycle Management (LCM) policies. Data accuracy is affirmed by system testing and the results of systems testing are reviewed during the Milestone III, System Development, by the MAISRC or service headquarters senior management review council.

AIR FORCE LIFE CYCLE PROCEDURES

Question. In your opinion, Mr. Springett, has the Air Force established procedures, guidelines, and standards implementing ADP system life cycle concepts?

Answer. The Air Force has established efficient and comprehensive guidelines and procedures for ADP system life cycle management. They are contained in AFR 700-4, Vol I, Information Systems Program Management. Standards for ADP system life cycle management are contained in AFR 700-9, Vol I, Information Systems Standardization Program.

Question. Do AFLC policy manuals include detailed step-by-step procedures?

Answer. In regard to AFLC procedures, the AFLC supplement to AFR 700-4, Vol I, contains detailed guidelines and procedures for implementing the ADP system life cycle concepts. The AFLC supplement to AFR 700-9, Vol I, and AFLCR 700-1, Application of Standards for AFLC Information Systems, contains the AFLC standards for implementing the ADP system life cycle concepts.

Question. In your opinion, Mr. Springett, does AFLC have the expertise to adequately manage the modernization development projects?

Answer. Yes. The AFLC Logistics Management Systems (LMS) Modernization Program is headed up by a general officer and a civilian member of the Senior Executive Service. The program managers that head up the modernization programs were carefully selected based on a unique blend of: (a) logistics and systems experience in the functional area of their program; (b) previous program management experience; and (c) information systems or hardware acquisition experience.

In addition, AFLC has developed an effective working relationship with numerous Air Force, DOD, and federal government agencies to supplement its expertise and share lessons learned. For example, some LMS program managers and their staff members have received information systems program management training from the DOD Computer Institute.

Based on the efforts made to select the right people for the job, and to keep them in tune with the state of the art through interaction with other government and private sector organizations, it is felt that AFLC has the expertise needed to effectively manage the modernization program. However, this will be monitored continuously and if further strengthening in the AFLC personnel is required than action will be taken to do so.

Question. At the general officer level, provide for the record the specific, formal ADP training that AFLC program managers have received.

Answer. Program managers for the AFLC LMS Modernization Programs are selected at the major through colonel and GM 14/15 level. These individuals are selected based upon functional background and acquisition management experience. They have received formal training in information systems technology and acquisition techniques from a variety of sources. These sources include the Defense Computer Institute, the Defense Systems Management College, Professional Military Education, Professional Military Comptroller School, and the Air Force Institute of Technology. AFLC also maintains close ties with the information systems industry through participation in industry sponsored courses, seminars, and professional organizations.

INDEPENDENT ASSISTANCE

Question. The Committee understands that the Air Force is employing independent service contractors to provide additional expertise. To whom do they report?

Answer. To assure the successful development of the AFLC LMS Modernization Program, the Air Force is employing a number of independent contractors where a determination has been made that special expertise is needed. The contractor may have a special role in support of the overall LMS Modernization Program, or may be employed to give specialized support to a particular individual program or to evaluate progress of a program.

The contractors report directly to the office that issued the contract. If the specialized support is for an individual program, the contractor reports directly to the Program Manager for that program, who is responsible for keeping AFLC/SI informed of status and of any significant problems with the program.

Question. Who evaluates their efforts?

Answer. Contractor efforts are evaluated by the office chief or Program Manager from the viewpoint of technical competence and response to the contract requirements. If the evaluator has problems with a contractor, the matter is worked through the AF Contracting Officer for resolution.

Question. How has AFLC sought to supplement its expertise with that available from other Air Force, Department of Defense, and federal government elements?

Answer. AFLC has established effective working relationships with numerous Air Force, Department of Defense, and federal government agencies to supplement its expertise and share lessons learned. These relationships include direct program support, training, technical guidance and information coordination to identify and adapt proven program management concepts and techniques to the modernization efforts.

Coordination has been established with Air Force Systems Command and Space Command to review their approach to information system integration.

A joint Army/Air Force program office was established for EDCARS/DSREDS and the Army and Air Force continually share lessons learned.

The RDB program office has reviewed the Phase IV project and is sharing lessons learned with the Air Force Design Center.

The DMMIS program office is working with the Air Force Wright Aeronautical Laboratories for manufacturing expertise and the Air Force Audit Agency to conduct an independent cost study. The Air Force Audit Agency services will be applied to other program offices.

Prior to and as part of revalidating the Stock Control and Distributing requirements, several visits were made to the Navy to determine the extent of their supply and distribution systems and the applicability of these systems to the Air Force's requirements. These visits helped form the contents of the Request for Proposal (RFP) that was issued in November 1984. The SC&D program office has reviewed the GSA's Software Improvement Program, and elements of the program were incorporated into the RFP. The Federal Conversion Center was contracted to determine the feasibility and expected costs to convert current system code to new hardware. Air Training Command provided guidance and coordination on the SC&D RFP prior to release and is participating in the source selection process for training. The Air Force Computer Acquisition Center (AFCAC) was designated to be the responsible contracting office for the SC&D Contract Award.

AFSC(ESD/OCC-3) is the Program Manager for the LAN Program due to their expertise and that of their System Engineering contractor, MITRE Corporation, in the area of networking. AFLC and ESD consult regularly with Air Force Communications Command (AFCC), the Defense Data Network (DDN) program office, and the Defense Communication Agency (DCA) on networking and communication programs and developments.

To enhance the command's expertise in information systems training, liaison has been established with Air Training Command for assistance and guidance in developing command-wide, fully integrated training programs. Plans include the possibility of establishing an ATC operating location at AFLC to support training requirements. AFLC/SI is participating in AF project "BOLD STROKE" which is chartered to determine the adequacy and currency of software training and management in the Air Force and to make recommendations for the future.

AFLC is using numerous agencies to support total training requirements to include the Department of Defense Computer Institute for information systems program management training.

Finally, AFLC is using the technical services of Lawrence Livermore National Laboratories in the areas of communications technologies and information systems security risk analysis.

PROJECT MANAGEMENT APPROACH

Question. How is the LMS modernization project management approach adequate to ensure efficient and effective system developments?

Answer. AFLC has institutionalized a structured and disciplined project management approach to ensure efficient and effective system development. It is based upon dividing the AFLC functional processes into manageable pieces and designing management systems according to the data requirements and decision structure necessary to support day-to-day operations. This approach insures that individual development and acquisition programs, each of which must be sustained on its own merits, contribute in an integrated way to improvements in logistics support to the operational commands.

LMS modernization is accomplished as a series of discrete programs providing an incremental approach to modernization. This approach reduces development risk and will assure a gradual phase-in of enhanced capabilities to bring benefits to the user as soon as possible. Project management begins during the requirements definition and continues through design, development, acquisition, installation, and test and evaluation of the systems. This includes the initial procurement of hardware, the system software acquisition and application software development, data base development, integration and checkout of all software, test and evaluation at the prototype site, data conversion, site preparation, training, acquisition of support material and equipment, and the development of system documentation. The repeated assessment of functional requirements throughout the program life cycle ensures that the system satisfies user needs and that mission requirements are the driving force to modernization.

Question. Has AFLC established formal mechanisms and tools to identify user requirements and ensure adequate system design and development management, direction, and control?

Answer. The Air Force and AFLC have established and documented formal mechanisms to identify user requirements and ensure adequate program direction and control. Procedures are contained in AFR 700-4, Vol I, Information System Program Management, the AFLC supplement to AFR 700-4, Vol I, and AFLCR 400-18, Program Management of Major Logistics Management Systems. User requirements must be defined in the program's Functional Description(s) and be approved by each program's configuration control board (CCB) for formal baselining.

Formal reviews and audits are required for all system developments. These reviews and audits are conducted at specified times throughout the ADP system life cycle to permit the program manager to make go/no go decisions. The reviews and audits required are the System Requirements Review, System Design Review, Preliminary Design Review, Critical Design Review, Product Verification Review, Functional and Physical Configuration Audit, and System Validation Review.

The Program Management Directive (PMD), Information Systems Directive (ISD), and their supplements contain formal direction from both the Air Force and AFLC. The Logistics Systems Acquisition Review Council Program Action Directive (LOGPAD) contains formal AFLC Chief of Staff direction to each program manager at each milestone.

Formal mechanisms for control are accomplished at two levels. The program managers control their programs by conducting the required system development reviews and audits. The Command controls each program through the Logistics Systems Acquisition Review Council (LOGSARC) process. The LOGSARC milestones are aligned with the Major Automated Information System Review Council milestones and are go/no go decision points for the Command.

Question. Has AFLC established formal techniques and measures to adequately monitor and assess contractor work?

Answer. Yes AFLC requires the use of Cost/Schedule Status Report by each contractor. This C/SSR requirement is an integral part of every Request for Proposal for all types of contracts to include fixed price and cost plus. This C/SSR is the formal technique by which contractor work is monitored. Assessment is conducted by program office personnel in conjunction with the mission user of each contract deliverable. Additional management reviews include monthly one-on-one review sessions conducted by AFLC/SI with each program manager; bi-monthly financial management review of each information system program conducted by the Deputy for Program Management in the Logistics Management Systems Center; and periodic full-scale program management reviews (PMRs) which are presented to the AFLC Command Section. This is culminated in semiannual reviews by the Secretary of the Air Force and OSD MAISRC.

Question. Has AFLC established a cost reporting system sufficient to systematically compare actual with estimated costs for evaluation of development progress and performance?

Answer. Yes. AFLC requires the use of Cost/Schedule Status Reports (C/SSRs) on Logistics Management Systems (LMS) modernization programs. The C/SSRs are a direct application of the Cost/Schedule Control Systems Criteria (C/SCSC) concept. The prime contractor is required to submit a performance measurement baseline for each program under C/SSR requirements. All subsequent progress is measured against that baseline and variance analyzed for any possible program impact. Variance analysis and projected impacts are currently automated in the Program Management Support System (PMSS). Management reviews of the C/SSR reports are conducted by the program office, the deputy for program management, the resources management directorate, and the Logistics Management Systems Center Command Section.

Question. Has AFLC established a formal progress reporting system that systematically provides accurate and effective management information to top management as well as project participants?

Answer. AFLC has two interrelated progress reporting systems and a structured management review process which keeps all levels of management apprised of program changes and status. Additional management reviews include monthly one-on-one review sessions conducted by AFLC/SI with each program manager; bimonthly financial management review of each information system program conducted by the Deputy for Program Management in the Logistics Management Systems Center; and periodic full-scale program management reviews (PMRs) which are presented to the AFLC Command Section. Throughout these reviews, the AFLC/SI staff, including resource management, architecture and standards, integration and plans and programs, provides expertise and guidance.

The HQ AFLC Logistics Management System (LMS) Modernization Baseline document was first published in June 1985. Program objectives, requirements, acquisition strategies, schedules, and budgets are baselined and updated using strict change control procedures.

The LMS Quarterly Progress Report provides updated status of the LMS modernization programs between Baseline publications. This report contains current milestone status, funding posture, program managers assessment, and identifies significant program accomplishments.

Question. Has AFLC established formal testing procedures with standard performance requirements for acceptance?

Answer. Yes. AFLC has established and documented formal testing procedures in AFLCR 171-86, Testing and Release of Logistics Management System Application Software, and AFLC supplement to AFR 700-4, Vol I, Information Systems Program Management. Following the direction in these regulations, each program develops their test plan to verify that the system adequately satisfies the user requirements defined and baselined in the functional description. The test plan is reviewed and approved at the critical design review and again at the product verification review before the test phase begins. Based on the test results, the user accepts the delivered system at the System Validation Review.

Question. Has AFLC established a process to ensure system development is independently evaluated, validated, and appropriately reported?

Answer. AFLC has established and documented independent system testing requirements and reporting in AFLCR 171-86, Testing and Release of Logistics Management Systems Application Software and AFLCR Sup to AFR 700-4 Vol I, Information System Program Management. Validation testing must be managed and conducted by independent test teams. These test teams can be composed of all Air Force personnel or be a combination of Air Force personnel and an independent verification and validation contractor. The independent test team must validate the test results with the user and prepare the test analysis report according to DoD 7935.1-STD, Automated Data Systems Documentation.

Question. Has AFLC established project monitoring and review geared to key activity phases to enable management to decide whether the project should continue at the end of each phase?

Answer. Yes. The Air Force and AFLC have established and documented project monitoring and review at key points during the ADP life cycle in AFR 700-4, Vol I, Information Systems Program Management, the AFLC supplement to AFR 700-4, Vol I, and AFLCR 400-18, Program Management of Major Logistics Management Systems. These regulations give appropriate management officials at both Air Force and Logistics Command levels the necessary oversight and decision authority at key phases of program development. AFLC has implemented a review and approval process for the development and acquisition of its modernized Logistics Management System (LMS). The process is structured after, and contains the same milestone review as the Defense Systems Acquisition Review Council (DSARC) established by DOD Directive 5000.1 and the Major Automated Information System Review Council (MAISRC) established by DOD Directive 7920.1. AFLC's approval process for its LMS modernization programs is the Logistics Systems Acquisition Review Council (LOGSARC) and, like the DSARC and MAISRC, it is composed of top level management officials who provide representation for the full range of disciplines required to successfully implement a modernized LMS system.

SAF/FM INITIATIVES

Question. Please describe in detail recent SAF/FM initiatives on the Stock Control and Distribution System and Requirements Data Bank to revalidate requirements, update the economic analysis, update the workload projection, and modify the RFP for changes in scope.

Answer. SAF/FM initiatives for the Stock Control and Distribution System include: revalidation of requirements in terms of the current situation, an update to the economic analysis to consider readiness improvements and dollar savings, new workload projections considering the near-term initiatives, and specific changes to the RFP.

Other that the request for an updated economic analysis and requirements documentation as a result of the MAISRC Milestone I Review in November 1984, SAF/FM has not required the RDB program to update workload projections, nor modify the RFP. AFLC did update the DAR-LOG-LOR-D82-121 and economic analysis (EA) following source selection to reflect the "best and final offer" of the BDM Corporation. This work was completed and approved in April 1985. The original economic analysis was certified in November 1982 far in advance of contract award. The original DAR was approved in 1978.

Question. Why are these actions necessary and what will they accomplish?

Answer. It was necessary to revalidate the SC&D requirements due to the design problems and delays encountered in the SC&D program. These delays resulted in the AFLC proceeding with a number of initiatives to alleviate the shortcomings in the current inventory control system until the new SC&D system could be implemented. These initiatives led to questions regarding the continuing need for the proposed modernization versus the feasibility of using existing hardware, supplemented by software and communication upgrades. AFLC took a hard look at its requirements in view of recent improvements and revalidated the need to pursue a modernized SC&D program.

The objective of the SC&D program is to improve Air Force readiness. There are three basic needs that SC&D will satisfy: current visibility of assets versus two/three day old data; a transaction-driven system capable of immediate requisition processing versus once or twice-a-day batch processing; and the ability to furnish our customers real time status on requisitions/shipments. Based on vendor input to the SC&D hardware RFP and AFLC's analysis, the basic needs could not be met with existing hardware or current software. This revalidation was approved by AFLC/CC on 6 August 1984. A Data Automation Requirement (DAR) amendment was prepared in 1985 and the DAR was validated by the AFLC Command Section and approved by AFLC/SI in February 1986.

The original SC&D EA was prepared and certified in 1982. At that time, alternative 4, which stated: buy new hardware/design new system/90% of the development effort to be accomplished organically, 10% contractually, was the recommended alternative. However, in 1984 an independent assessment by the management firm of Deloitte, Haskins and Sells led to a recommendation by SAF/FM that the application software be modernized and developed by contractor rather than organic resources.

SAF/FM also directed that AFLC take a hard look at the readiness improvements and any savings in terms of dollars and/or potential manpower reductions which could be provided to the Air Force by the SC&D program. The EA was updated to reflect the following benefits: $3.653 billion in intangible benefits which can be related to AF readiness improvements in the form of 107 additional aircraft equivalents and $14.4 million tangible benefits (a one time reduction) in the area of BP 1500 recoverable assets in the pipeline. No manpower reductions were identified. The availability of management information in a real time mode will result in Air Logistics Center personnel spending more time working with the information, making more accurate decisions, and improving support to the operational commands. The updated EA confirmed the SAF/FM decision to proceed with the present SC&D program without delay.

The SAF/FM memo requested that AFLC take action to update the original 1981 workload projections for any impact from the near-term initiatives or any other changes which have taken place since the original projections were made. The original transaction volume figures in the 1982 functional description provided the sizing data that was included with the hardware RFP. The data were based upon estimates from the ALCs. An update was needed based on current data extracted from automated reports. These data were included in the modified RFP and portray the maximum number of transactions processed in one month at any one of the ALCs under today's current systems operation. These volumes include a 50% surge factor, which represents extended wartime processing requirements. The RFP also states that for purposes of sizing the total volume, the figures should be increased by 15% a year, compounded annually beginning in May 1984.

In 1982, the Air Force Computer Acquisition Center (AFCAC) released the SC&D RFP to industry, with vendor proposals due 7 April 1983. This RFP was for the acquisition of computer hardware, telecommunications support, including the AFLC gateway, and system software. In July 1984, due to the recommendation by Deloitte, Haskins and Sells, SAF/FM directed that the existing RFP be revised to incorporate appropriate changes, including (1) elimination of the gateway task, (2) addition of necessary evolutionary software development work, (3) incorporation of the entire system intergration effort, and (4) plans to ensure full competition of the revised solicitation be pursued.

In July 1984, the SC&D program office requested that AFCAC amend the 1982 RFP to include the previous organic Air Force software effort and the other SAF/FM recommendations. The AFCAC contracting officer made a determination that the change as presented was outside the scope of the existing RFP and required new competition. The current offerors on the existing RFP were notified of the decision to incorporate the application software and to reopen the RFP for full competition.

In August 1984, a Business Strategy Panel was convened to review and approve the new acquisition strategy. In August 1984, the Source Selection Advisory Council (SSAC), chaired by AFLC/CS, was briefed and approved the acquisition strategy and the source selection plan.

The Statement of Work (SOW) contained in the Request for Proposal (RFP) was issued to all interested vendors on 16 November 1984. It defined the basic tasks necessary to plan, control, design, develop (and/or modernize), test, document, and implement the AFLC's Stock Control and Distribution (SC&D) System. The prime development contractor will bear total responsibility for successful performance and integration of all component parts comprising the entire system, and will be responsible for total SC&D system performance. This includes all hardware, software and telecommunications (host, front end processor (FEP), terminals) capability, whether furnished by the government, a subcontractor or the prime contractor. Because of the nature of this program (scope, complexity, and mixture of hardware/software procurements, etc.), a special hybrid contract containing both fixed price and cost plus features is being used spanning 144 months. This contract will consist of a six month system engineering development proposal (SEDP); a ten month pilot project deliverable; software development (and/or modernization)/hardware procurement actions spanning contract months 11 through 42; and follow-on maintenance support, possible additional hardware buys, etc., from contract months 43 through 144.

During the six month effort, the contractor developed the application software computer program configuration item (CPCI) schedules. This proposal addresses what hardware is required (and when) in order to support implementation of the CPCI software. The 10 month pilot effort is a demonstration of the contractor's ability to perform software development and/or modernization. The rest of the software will be developed (and/or modernized) between contract months 11 and 42. The government will issue delivery orders for the hardware to support the contractor's stated software implementation schedule.

On 21 August 1985, AFLC awarded contracts to Martin Marietta Data Systems and Computer Sciences Corporation for a 10 month fly-off. The pilot demonstration and the results of the 6 month effort will form the basis for the Air Force's selection of a single contractor, referred to as "select down", to complete the program. The second proposal, SEDP, was received on schedule in February 1986, and source selection is in process, leading to a select down in

July 1986 with initial operating capability (IOC) of the SC&D hardware and pilot project targeted for October 1986. The implementation of the pilot program (item manager wholesale requisition process) at the first ALC will be followed by implementation at the other sites and the remaining SC&D functions leading to Full Operational Capability (FOC), which is scheduled for January 1989.

CONTRACTING ISSUES

Question. Why did the Air Force contract for the second option in the Requirements Data Bank even though 5 of 6 deliverables contracted for in the first option for approximately $26 million were not delivered, validation tests performed on the one received deliverable were either not performed or incomplete, and the project is behind schedule and over cost?

Answer. Prior to the award of the second option, AFLC assessed the contractor's performance, considering schedule, testing and cost. The RDB was on schedule as briefed to the Major Automated Information System Review Council (MAISRC) in July of 1985. The D062 Depot Data Base had been tested and version 1.0 was accepted for operational use prior to exercising Option 2. All remaining deliverables had established development, test, and implementation schedules.

To date, there are three operational portions of RDB, the D062 data bank, and two PPBS subprojects. All operational portions have completed testing and have been accepted by the Air Force. The development of four of the remaining five LAG 1 systems is complete and they are in various stages of testing. The remaining system is scheduled for test and implementation in July 1986.

Only those work packages in Option 2 which were not technically dependent on the completion of Option 1 segments were allowed to be opened. The opening of these specific work packages allowed acquisition and installation of production computer hardware which is necessary to operate the software currently being designed and developed. The installation of the hardware was essential to meet the software development and independent verification and validation testing necessary to support LAG 2 software.

Question. Since there is no contractual penalty for delaying exercise of the option, and under the cost plus incentive arrangement, development options are the only leverage over the contractor, why did the Air Force not determine if the contractor could resolve first year problems before providing $36 million more to begin second year work?

Answer. The Air Force did determine that the contractor resolved its first year problems before Option 2 was exercised. In fact, the contractor is on course in meeting the July 1985 MAISRC schedule. The RDB contract is cost-plus-award fee where the award fee can vary from 3 to 10% based upon how well the contractor performs as compared to his projected schedule, cost, and technical accomplishments. To provide proper contractor incentive, the Air Force has withheld a significant amount of Option 1 award fee. The RDB award fee board will determine the amount of award fee at the completion of the remaining work. Only the work packages that have been opened are subject to award fee on Option 2. These work packages are not technically dependent upon completion of Option 1 work. The use of these incentive provisions provide effective leverage over the contractor.

Question. Mr. Springett, will the cost overrun and schedule slip cause the MAISRC to revoke the delegation of oversight authority to the Air Force, or can the Committee expect business as usual?

Answer. The cost overrun and schedule slip was briefed to the MAISRC. As this impacts only one group of nine overall within the Requirements Data Bank and the program has been placed under strong management review by the Air Force Secretariat the MAISRC has chosen at this time, not to revoke the delegation of oversight authority. The MAISRC will again be reviewing the overall modernization program in August 1986.

STOCK CONTROL AND DISTRIBUTION PROJECT

Question. Concerning the Stock Control and Distribution Project: Has the revalidation of the systems requirements been signed off by the AFLC Command section and approved by Air Force headquarters?

Answer. Yes. On 6 August 1984, AFLC/CC revalidated requirements for the SC&D system. The Source Selection Advisory Council, which included members from AF headquarters, approved the revalidation in August 1984. Additionally, on 21 January 1986, AFLC/CS revalidated requirements for the SC&D system concurrent with validation of the updated economic analysis.

Question. What readiness improvements and savings in terms of dollars or potential manpower reductions have been identified to be included in the economic analysis?

Answer. System benefits are documented in the SC&D economic analysis and are as follows:

a. Intangible Benefits:

Area: Increased Air Force Readiness.

Amount: $3.653 billion.

Explanation: The principal objective of the SC&D program is enhancement of AF readiness through improved logistics support. With an on-line system, the order and ship time (O&ST) can be reduced and materiel provided to the requisitioner sooner. We have forecast a range of O&ST reductions from 12 to 26 hours. The 12/26 hour reductions were input into an accepted Air Force readiness model and readiness improvements determined in the form of additional aircraft equivalents. These aircraft equivalents were related to intangible dollars in the amount of $3.653 billion.

b. Tangible Benefits:

(1) Area: Value of BP1500 recoverable assets in the pipeline.

Amount: $14.4 million, one-time reduction.

Explanation: A reduction of 12 hours O&ST in the recoverable item requirements system computation will result in a tangible savings of $14.4 million in the year of full implementation.

c. Personnel Savings:

(1) Mission personnel. There is no evidence that going from a batch, once/twice a day system to an on-line, real time system will save any manpower. The availability of management information in a real time mode will result in ALC management personnel

spending more time at the computers obtaining information from which to make better quality decisions.

(2) Data Automation. It has been shown that with good documentation and structured programs, it should take less effort to maintain the application systems. Maintenance programmers that will not be needed will be assigned to the new functions of data base and telecommunications software. The number of personnel will be constant, but the skills will change.

Question. What are the original versus updated system workload projections and their impact on system capacity and development?

Answer. In 1982, the monthly transaction volume was estimated at 2.3 million; the 1984 estimate was 5 million transactions. Even with the significant increase in transaction volume, there is minimal impact to system capacity and development from the 1982 approach to the 1984 approach. This is due to the fact that the transactions are processed on-line in a data base environment. The one contractor who bid in 1982 and in 1985 did not change his proposed hardware because of the transaction volume increase.

Question. What specifically has been done to modify the RFP to existing system requirements and how does this ensure full and open competition of the solicitation?

Answer. The original SC&D DAR was approved in February 1979, and the first Functional Description (FD) was baselined in 1982 following the System Requirements Review. These two documents contained the SC&D system requirements. The FD was updated in 1984 to reflect revised system requirements. The RFP was updated and provided to all potential vendors. In July 1984, the SC&D program office requested that the Air Force Computer Acquisition Center (AFCAC) amend the 1982 RFP to change the organic Air Force software effort to contractor efforts and include other SAF/FM recommendations. The AFCAC contracting officer made a determination that the change as presented was outside the scope of the existing RFP and required new competition. As a result of the new RFP, competition increased and more proposals were received.

Question. How much have program costs increased, and identify the areas where this has occurred?

Answer. Since 1983, the program costs have increased by $53 million. Prior to 1984, the estimated SC&D program budget included $114 million for O&M and $35 million for purchase. The O&M funds were for lease of the central site equipment; the purchase funds were for the remote terminal equipment.

In 1984, the acquisition strategy changed to include contractual development of the application software and purchase of the central site equipment. In addition, the program office added contractual service funds for program management, system engineering technical services, and test support. The cost estimates for telecommunications, hardware, maintenance, TDY, and site preparation were also revised. Thus, the acquisition costs are now $140 million in O&M and $62 million in purchase. It is also estimated that $8.9 million annually in O&M will be required to support the SC&D system after Full Operational Capability.

REQUIREMENTS DATA BANK

Question. Is the Air Force approving the development of a new computer system, such as the Requirements Data Bank, without adequately validating the need for a new system, that the anticipated benefits can be derived, and that the best solution to meet their needs was selected?

Answer. No! For all LMS major programs, AFLC follows the procedures for validating requirements contained in the 700 series regulations (previously 300 series) and AFLCR 400-5. This includes a comprehensive review by the Directorate of Command Requirements and approval by the AFLC board structure. Specifically, the RDB Data Automation Requirement (DAR) documented the functional user's requirements and was validated.

Benefits are projected for the LMS programs that are validated. RDB defined and justified tangible benefits, as well as intangible benefits through automating manual processes, eliminating software duplication of individual requirements systems data bases, and providing real-time access to critical data for our weapons and system managers to account for and project war and peacetime spares levels. Benefits are documented and methodologies quantified to support the program. An Economic Analysis (EA) is required for all programs that exceed thresholds in AFR 300/700 series regulations. The RDB's EA considered seven alternatives to satisfy validated requirements. This included retaining current systems, enhancements to individual data systems, or development of new systems. Each alternative was evaluated and rationale provided for the solution that was selected.

Question. Why was the economic analysis for the Requirements Data Bank not finalized until after the development contract was signed and the first option was exercised?

Answer. Contrary to the statement in the question, the original economic analysis (EA) for the RDB was finalized prior to contract award. It was prepared in October 1982 and certified on 10 November 1982. The EA was revised in April 1985 and re-certified 11 June 1985. The revised EA was updated to reflect the selected contractor's Best and Final Offer (BAFO), to expand the projected benefits and better quantify those benefits.

Question. What alternatives to an entire new system were considered?

Answer. A total of seven alternatives were considered for the Requirements Data Bank project development. Four involved developing a completely new system. The three alternatives considered which did not require the development of an entire new system were:

a. Retain the Current System. This alternative was not considered feasible because the current system could not provide the needed capabilities.

b. Separate Enhancements to the Individual Data Systems. This alternative would not eliminate the overall deficiencies of the Materiel Requirements Process dealing with inconsistent spares computations and computing spares requirements based on weapon system availability for combat and war sustainability. This alternative was not considered feasible because "patching" individual systems could not deal with the interdependencies between the existing systems and could lead to further disconnects and resultant demands on manual integration.

c. Develop RDB on Expanded Current Hardware. No existing hardware was available for this option.

Question. What benefits have been quantified?

Answer. a. Improved support to management by providing the capability to accomplish/evaluate resource allocation based on weapon system war readiness capabilities:

Tangible: $89.8M one-time safety level reduction.

Readiness: Increase quantity of mission-capable aircraft by 175 aircraft equivalents. To achieve the same level of readiness (175), an investment of $2.7B would be required to procure the additional aircraft.

b. Improved manpower efficiencies in budget preparation, POM forecasts, and special reports to improve quality and timeliness.

Intangible: $8.3M annually.

c. Improved accuracy of Budget/POM forecasts and item procurement and repair actions:

Tangible: $145M annually for reduction of unnecessary procurements.

Intangible: $68M one time in the asset value of items which should be in repair but are not.

Question. What criteria were used to measure the success and effectiveness of the Requirements Data Bank prior to contracting for development, exercising subsequent development options, and into the option period when deliverables are being received by the Air Force?

Answer. After the Data Automation Requirement (DAR) was approved in January 1983, the RDB program office developed a Request For Proposal (RFP) and source selection plan that spelled cut the criteria that would be used in evaluating prospective bidders in the initial source selection to determine the participants for the "flyoff" and to evaluate the contractors in the proposed twelve month flyoff. The criteria and procedures for AFLC to conduct their evaluations were documented in a Source Selection Procedures Document and accompanying evaluation checklists. These checklists contained systems performance standards as spelled out in the RDB specifications, documentation standards as spelled out in DOD and AF regulations, contract tasks requirements, and the proposed system requirements.

The criterion used to exercise subsequent development options is satisfactory accomplishment of all prerequisite tasks. For each contract option, the contract line items outline those life cycle phases that must be accomplished for the part of the system. The status of each segment or part is reviewed weekly at the Program Status Review.

Every four months, an Award Fee Board meets to review the contractor's performance. This review rates the contractor in cost performance, program management, and technical performance/quality of work. A report is provided the contractor that identifies weaknesses that must be improved. Status of development and contractor performance govern exercise of a subsequent development option.

Each software deliverable is validated using a Test Plan that contains both the contactor's test and additional tests designed by the Air Force and the IV&V team. This test plan validates the functional requirements contained in the software product's Functional Description (FD). The functional requirements (needs and objectives/improvement) are cross-referenced to the deficiencies/objectives in the Project Plan, the Contract/Master Functional Description (MFD), the DAR and EA, and eventually to the AFLC Mission Element Needs Statement (MENS) and the Required System Capability (RSC). This traceability and the specific test plan criteria for accepting any software product ensure all RDB objectives are met. Table 1 provides the approach used to track actual benefits to Economic Analysis references.

NR	APPROACH FOR TRACKING ACTUAL BENEFITS REALIZED	EA REF	LAG								
			1	2	3	4	5	6	7	8	9
1	RESOURCE ALLOCATION. TRACK AIRCRAFT AVAILABILITY AND SORTIE CAPABILITY TO DETERMINE AVERAGE INCREASE IN AIRCRAFT AVAILABLE TO THE OPERATIONAL COMMAND.	6.3.5.1			●	●	●	●	●		
2	RESOURCE ALLOCATION. OPERATIONAL EVALUATION OF THE RDB WILL BE CONDUCTED TO DETERMINE IF FUNCTIONS ARE BEING PERFORMED. THIS WILL BE DONE BY INTERVIEW OF INVOLVED PERSONNEL TO COMPARE NEW VERSUS OLD METHOD.	6.3.5.2	●		●	●	●	●	●	●	●
3	AUTOMATED, PREDEFINED REPORTS FOR BUDGETS AND POM. IMPROVED ACCURACY OF BUDGET/POM SUBMISSION WILL BE MEASURED THROUGH COMPARISON WITH SUBMISSION PRIOR TO RDB.	6.4.5.1	●		●	●	●	●	●	●	●
4	AUTOMATED, PREDEFINED REPORTS FOR BUDGETS AND POM. REDUCTIONS IN MANUAL EFFORT WILL BE MEASURED THROUGH INTERVIEW OF PERSONS BY COMPARISON OF OLD AND NEW METHODS.	6.4.5.2	●		●	●	●	●	●	●	●
5	AUTOMATED COMPUTATION OF REQUIREMENTS FOR SPECIAL CONDITIONS. SURVEYS AND INTERVIEWS WILL BE CONDUCTED TO VERIFY THE IMPROVED ACCURACY OVER THE PREVIOUS MANUAL OPERATION.	6.5.5.1			●	●	●	●	●		
6	AUTOMATED COMPUTATION OF REQUIREMENTS FOR SPECIAL CONDITIONS. SURVEYS WILL BE CONDUCTED TO MEASURE THE DIFFERENCE IN MANUAL EFFORT IN THE OLD AND NEW SYSTEMS.	6.5.5.2			●	●	●	●	●		
7	IMPROVED ACCURACY OF BUDGET/POM FORECASTS AND ITEM PROCUREMENT AND REPAIR ACTIONS. A COMPARISON OF THE OLD AND NEW METHODS WILL BE MADE TO DETERMINE THE VALUE OF MANAGEMENT SCRUB, ON ORDER INAPPLICABLE TO CURRENT REQUIREMENTS, AND VALUE OF UNSERVICEABLE ASSETS NOT IN WORK THAT ARE APPLICABLE.	6.6.5	●	●	●	●	●	●	●	●	●

Table 1 Approach for Tracking Actual Benefits Realized 1 OF 2

N R	APPROACH FOR TRACKING ACTUAL BENEFITS REALIZED	EA REF	LAG								
			1	2	3	4	5	6	7	8	9
8	RESOURCE ALLOCATION. PROVIDE ANALYTICAL AND DECISION MODELS TO EVALUATE LOGISTIC RESOURCE ALTERNATIVES AND TRACK RESULTS IN TERMS OF WEAPON SYSTEM CAPABILITIES.	6.2.1			●	●	●	●	●		●
9	RESOURCE ALLOCATION. IMPROVE ACCURACY OF LONG RANGE FORECASTS. EVALUATION OF OLD AND NEW TECHNIQUES WILL BE COMPARED THROUGH INTERVIEW OF INVOLVED PERSONNEL.	6.2.1			●	●	●	●	●		●

Table 1 (Continued) 2 OF 2

Question. The Committee understands that the Air Force has identified 48 major deficiencies in the requirements determination process which Requirements Data Bank is intended to correct. Name the 48 deficiencies and show where in the five-year RDB development they will be corrected.

Answer. The 48 major deficiencies and the Logical Application Groups (LAG[s]) in which each deficiency will be corrected is documented in the RDB LAG Project Plan. Table 2 describes deficiencies and cross-references them to LAG implementation date.

DEFICIENCIES	PPBS	LAG								
		1 4/86	2 3/87	3 5/87	4 8/87	5 2/88	6 2/88	7 8/88	8 3/89	9 4/89
2.3.3.1. FUNCTIONAL PERSONNEL ARE CONSTRAINED BY NOT HAVING ADEQUATE TIME TO PERFORM FILE MAINTENANCE.	●		●	●	●					
2.3.3.2. DATA REQUIREMENTS RELATIVE TO STANDARD CODES, COMPLEX TRANSACTION CODING, AND CONFLICTING/DUPLICATE DATA ENTRIES ARE REPRESENTATIVE OF NUMEROUS CONDITIONS THAT AFFECT TRANSACTION REJECTIONS AND RESULT IN ADDITIONAL COSTS TO BOTH PERSONNEL AND COMPUTER RESOURCES.		●	●	●	●					
2.3.3.3. LATEST DATA WITHIN THE SYSTEM ARE NOT ALWAYS AVAILABLE TO FUNCTIONAL PERSONNEL.	●	●	●	●	●	●				
2.3.3.4 THE CONTENT OF THE OUTPUT REPORTS ARE NOT STRUCTURED TO MEET THE NEEDS OF THE VARIOUS LEVELS OF MANAGEMENT.	●	●	●	●	●	●				
2.3.3.5. CERTAIN TYPES OF HISTORICAL DATA ARE NOT MAINTAINED ON COMPUTER ACCESSIBLE MEDIA.	●	●	●	●	●	●				
2.3.3.6. THE MAJORITY OF TREND ANALYSIS EFFORTS MUST BE MANUALLY PERFORMED BY FUNCTIONAL PERSONNEL.	●		●	●	●	●				
2.3.3.7. DUPLICATE REQUIREMENTS-RELATED DATA ELEMENTS EXIST ACROSS A NUMBER OF DATA SYSTEM AND DATA FILES.	●		●	●	●	●				
2.3.3.8. THE SYSTEM DOES NOT HAVE THE CAPABILITY TO RECOMPUTE ITEM INVENTORY REQUIREMENTS WHEN AN INPUT FACTOR SUCH AS THE FLYING PROGRAM OR BUDGET CONSTRAINT CHANGES.			●	●	●					
2.3.3.9. THE SYSTEM HAS MULTIPLE INTERFACES WHICH CAUSES AN INORDINATE DELAY IN UPDATING EXTERNAL FILES	●			●	●	●				
2.3.3.10. THE PRESENT SYSTEM DOES NOT PROVIDE AND AUTOMATED CAPABILITY TO COMPUTE AN ACCEPTABLE REPAIR REQUIREMENTS FORECAST FOR EQUIPMENT ITEMS.										
2.3.3.11. THE FEED OF DATA FROM THE INTERFACING SYSTEMS TO D073 MISTR SYSTEM DOES NOT PROVIDE CURRENT DATA UPON WHICH A VALID BI-WEEKLY REPAIR DRIVE CAN BE BASED.			●	●	●					
2.3.3.12. REQUIREMENTS SYSTEMS PROVIDE LIMITED BACK-UP CAPABILITIES FOR CONTINUED OPERATIONS DURING PERIODS IN WHICH THE PRIMARY DATA PROCESSING SITE IS INOPERATIVE.		●	●							
2.3.3.13. SYSTEMS DO NOT HAVE THE CAPABILITY TO RESPOND TO SUDDEN INCREASES IN WORKLOAD (1) COMPROMISING THE PERFORMANCE REQUIREMENTS OF CRITICAL PROCESSING TASKS AND (2) REQUIRING A MAJOR MANUAL RESCHEDULING EFFORT.	●	●	●							

1 OF 4

Table 2 Deficiencies

DEFICIENCIES	PPBS	LAG								
		1 4/86	2 3/87	3 5/87	4 8/87	5 2/88	6 2/88	7 8/88	8 3/89	9 4/89
2.3.3.14. DUE TO THE LARGE NUMBER OF DIFFERENT ADP SYSTEMS USED IN THE REQUIREMENTS PROCESS, MULTI SYSTEM CHANGES NUST BE MADE TO ACCOMMODATE A NEEDED CHANGE.			●	●	●					
2.3.3.15. SOME ELEMENTS OF DATA ARE DESCRIBED AND CONTROLLED DIFFERENTLY BY INTERFACING SYSTEMS, CAUSING MISUNDERSTANDING OF INTENT BY USERS OR LACK OF STANDARDIZATION AMONG DATA SYSTEMS.	●		●	●	●					
2.3.3.16. WHEN SYSTEMS BECOME INOPERATIVE DUE TO SYSTEM DEFICIENCIES, EITHER LOSS OF DATA OR DOUBLE UPDATING OF A RECORD OR DATA ELEMENT IS EXPERIENCED.		●	●							
2.3.3.17. AVAILABILITY AND PROCESSING OF SIMULATION AND DECISION MODELS ARE LIMITED TO USING THE QUARTERLY PRODUCED TAPE FILES FROM THE D041 AND THE D062 SYSTEMS.				●	●	●				
2.3.3.18. THE OPERATIONAL SYSTEMS ARE NOT CAPABLE OF ALLOWING IMMEDIATE ACCESS AND REAL-TIME PROCESSING FOR USERS.	●	●	●	●	●	●				
2.3.3.19. THE SYSTEMS USED BY THE IMS, PMS, ES AT THE ALC HAVE LIMITED DATA ACCESS/RETRIEVAL FOR FILE MAINTENANCE AND SCHEDULED SYSTEM PROCESSING.	●		●	●	●	●				
2.3.3.20. THE PROCESSING ENVIRONMENT OF THE SYSTEM HAS LIMITED COMPUTER RESOURCE AVAILABLE ON A CONTINUING BASIS.	●	●	●	●						
2.3.3.21. SYSTEMS PROVIDE LITTLE "WHAT IF" SIMULATION CAPABILITY.	●	●	●	●	●	●				
2.3.3.22. SYSTEMS DO NOT PROVIDE AN AUTOMATED CAPABILITY TO ACCURATELY IDENTIFY ITEMS THAT WILL BECOME CRITICAL.	●				●					
2.3.3.23. SYSTEMS DO NOT PROVIDE A RANDOM ACCESS CAPABILITY.	●	●	●	●						
2.3.3.24. MUCH MANUAL EFFORT IS EXPENDED IN DEVELOPING AND CHANGING INPUT DATA.	●	●	●	●	●	●				
2.3.3.25. SYSTEMS DO NOT POSSESS FLEXIBLE DATA BASES PERMITTING NEW TYPES OF DATA TO BE ADDED.	●	●	●	●	●	●				
2.3.3.26. SYSTEMS DO NOT HAVE ADEQUATE AUTOMATED TECHNIQUES TO COMPUTE PROCUREMENT AND MATERIAL REQUIREMENTS FOR THOSE ITEMS MANAGED BY OTHER MILITARY SERVICESAND DLA UNDER THE INTERSERVICE SUPPORT PROGRAM.				●	●	●				
2.3.3.27. SOME ITEMS THAT REQUIRE CRITICAL MANAGMENT ATTENTION ARE NOT KNOWN UNTIL AFTER SUPPLY EFFECTIVENESS IS IMPACTED.	●			●	●	●				
2.3.3.28. SYSTEMS DO NOT PROVIDE COMPATIBLE REQUIREMENTS FORECASTS AMONG RELATED ITEMS.				●	●	●				

2 OF 4

Table 2 (Continued)

DEFICIENCIES	PPBS	LAG								
		1 4/86	2 3/87	3 5/87	4 8/87	5 2/88	6 2/88	7 8/88	8 3/89	9 4/89
2.3.3.29. STOCK LIST CHANGES ARE NOT RECEIVED SUFFICIENTLY IN ADVANCE OF THE EFFECTIVE DATE TO PERMIT ANALYSIS OF THE IMPACT ON MATERIAL REQUIREMENTS..				●	●					
2.3.3.30. HISTORICAL CONSUMPTION AND REQUIREMENTS DATA ARE NOT READILY AVAILABLE.	●	●	●	●	●					
2.3.3.31. SYSTEMS DO NOT PROVIDE THE MEANS TO IDENTIFY EQUIPMENT ITEMS THAT ARE TRANSITIONING INTO OR OUT OF THE AIR FORCE EQUIPMENT ITEM MANAGEMENT SYSTEM (AFEMS).										
2.3.3.32. SYSTEMS PROVIDE LIMITED VISIBILITY (QUARTERLY) OF EQUIPMENT AUTHORIZATION AND IN-USE DATA.										
2.3.3.33. SYSTEMS DO NOT PROVIDE CURRENT AND ACCURATE DATA RELATIVE TO CHANGES IN ITEM USAGE HISTORY, PROJECTED REQUIREMENTS DATA, AND ITEM APPLICATION TO WEAPON SYSTEMS DATA.			●	●	●	●				
2.3.3.34. SYSTEMS DO NOT PROVIDE CONTROLLED PROTECTION OF FILE DATA FROM UNAUTHORIZED ACCESS.	●	●	●							
2.3.3.35. REQUIREMENTS ARE IDENTIFIED TOO LATE FOR INCLUSION IN THE BUDGET AND POM SUBMISSIONS.	●			●	●	●				
2.3.3.36. FORCE STRUCTURE AND OTHER REQUIREMENTS DATA CAN BE 4 TO 8 MONTHS OLD WHEN INPUT INTO THE PPBS PROCESS.	●		●	●	●					
2.3.3.37. SYSTEMS CONSISTENTLY UNDERESTIMATE REQUIREMENTS WHICH ARE INPUT TO THE POM.				●	●					
2.3.3.38. THE PROCESS DOES NOT HAVE THE CAPABILITY TO REACT TO PROGRAMMATIC CHANGES DURING THE EXECUTION OF THE PROCUREMENT AND REPAIR PROGRAMS.	●			●	●					
2.3.3.39. THE PROCESS DOES NOT HAVE THE CAPABILITY TO CONTROL PROCUREMENT AND REPAIR ACTIONS FOR SPARES AND EQUIPMENT BY WEAPON SYSTEM.				●	●					
2.3.3.40. BATCH PROCESSING LIMITS THE TIME ALLOTTED EACH QUARTER TO UPDATE SYSTEMS THEREBY REQUIRING MANUAL UPDATES.	●	●	●	●						
2.3.3.41. THE SYSTEM DOES NOT HAVE THE CAPABILITY TO PROVIDE WEAPON SYSTEM WAR READINESS ASSESSMENTS TO SUPPORT PROCUREMENT AND MAINTENANCE FUNDS REQUESTED IN THE POM.	●			●	●	●				

3 OF 4

Table 2 (Continued)

DEFICIENCIES	PPBS	LAG								
		1 4/86	2 3/87	3 5/87	4 8/87	5 2/88	6 2/88	7 8/88	8 3/89	9 4/89
2.3.3.42. THE SYSTEM DOES NOT HAVE THE CAPABILTY TO ASSESS WEAPON SYSTEM CAPABILITY WHICH IS ACHIEVEABLE WITH ON-HAND ASSETS AND CURRENT REPAIR PIPELINE CAPABILITIES.				●	●	●				
2.3.3.43. THE PROCESS DOES NOT HAVE THE CAPABILITY TO DETERMINE SPARES STOCKAGE REQUIREMENTS THAT PROVIDE THE MOST COMBAT AIRCRAFT AVAILABLE.				●	●	●				
2.3.3.44. THE PROCESS DOES NOT HAVE THE CAPABILITY TO COMPUTE REQUIREMENTS BASED ON DEFENSE GUIDENCE OBJECTIVES WHEN THE EXPECTED WAR IS MORE OR LESS THAN 365 DAYS.						●				
2.3.3.45. THE PROCESS DOES NOT HAVE THE CAPABILITY TO DETERMINE RREQUIREMENTS USING EXPECTED WARTIME USAGE RATES, ITEM ESSENTIALITY TO WARTIME MISSION ACCOMPLISHMENT, AND EXPECTED WARTIME PIPELINE DISRUPTIONS.						●				
2.3.3.46. POLICIES RELATING TO RECOVERABLES, CONSUMABLES, AND ENGINE/MODULE READY RATES ARE INCONSISTANT AND RESULTS IN UNBALANCED LOGISTICS SUPPORT TO WEAPON SYSTEMS AND LESS THAN OPTIMUM USE OF AVAILABLE LOGISTICS RESOURCES.				●	●					
2.3.3.47. THE PROCESS DOES NOT EFFECTIVELY USE PREDICTIVE FORECASTING TECHNIQUES BY OMITTING MAINTENANCE AND MODIFICATION IMPROVEMENTS WHICH AFFECT FUTURE DEMANDS.				●	●					
2.3.3.48. THE PROCESS DOES NOT HAVE THE CAPABILITY TO RETRIEVE ITEM, WEAPON SYSTEM, OR BUDGET EXECUTION DATA THEREBY LIMITING DECISION MAKING CAPABILITIES	●	●	●	●	●					

4 OF 4

Table 2 (Continued)

Question. What are the quantifiable benefits of correcting these deficiencies?

Answer. The RDB benefits are as follows:

a. Improved support to management by providing the capability to accomplish/evaluate resource allocation based on weapon system war readiness capabilities:

Tangible: $89.8M one-time safety level reduction.

Readiness: Increase quantity of mission-capable aircraft by 175 aircraft equivalents. To achieve the same level of readiness (175), an investment of $2.7B would be required to procure the additional aircraft.

b. Improved manpower efficiencies in budget preparation, POM forecasts, and special reports to improve quality and timeliness.

Intangible: $8.3M annually.

c. Improved accuracy of Budget/POM forecasts and item procurement and repair actions:

Tangible: $145M annually for reduction of unnecessary procurements.

Intangible: $68M one time in the asset value of items which should be in repair but are not.

Question. GAO reports that RDB work planned to be accomplished by the end of the first year has been deferred to subsequent years. What is the impact on cost and schedule?

Answer. The RDB work planned to be accomplished by the end of the first year has been rescheduled as briefed to the DOD MAISRC in July 1985. The bulk of the work that was to be complete by the end of the first year will be complete by the end of April 1986. This includes the development of all LAG 1 systems. Currently, the development of all but one of the LAG 1 systems is complete. These systems are in testing. None of the first year work has been deferred beyond 1986.

To date, there has been a 1.1 million dollar cost growth. In addition, we anticipate Option year 1 work to increase in cost by 4.2 million dollars. This increase will be offset by a dollar for dollar reduction in Option year 2 work. The contractor will be doing more systems analysis work in Option 1 than originally scheduled, and less in Option 2. The total overrun projected through Option 2 is $1.1 million.

Question. What has the Air Force done to assure itself that the system will still meet performance expectations without overrunning costs?

Answer. The Air Force has implemented a tight management process on the RDB. The best way to control costs on a cost plus contract is to control the requirement process and the contractor work packages.

Strict configuration management procedures have been established. The Air Force has made a special effort to define, in writing, what is required and does not allow either contractor or Air Force personnel to make an unapproved change. That discipline is controlling costs.

In addition to strict configuration management, schedule control of the contractor work packages is essential. The Air Force has broken the RDB down into manageable increments which are assigned to a small Air Force/contractor team for development. The

Air Force members of this development team are fully aware of the system development and can make the necessary decisions affecting cost and capability. A structured management review process, including the program steering committee, the requirements control board, and program management reviews, has been established to make program change decisions and resolve problems. In this manner, the Air Force will ensure that the RDB objectives are met without uncontrolled cost growth.

Question. Describe your recovery plan.

Answer. The RDB recovery plan recognized that:

a. The original LAG 1 and LAG 2 schedules were too optimistic.

b. The man-loading of the contractor was too heavy in the first two contract years and did not match the funding profile.

c. The Air Force could not fully support the schedule and perform the required review functions at an acceptable level.

To correct these program deficiencies, a recovery plan was developed to adjust the LAG 1 and LAG 2 schedules. We now have a software development schedule agreed to by the contractor at the Chief Executive Level which can be accomplished. The LAG 3 through LAG 9 schedules were reprogrammed to more carefully match the planned funding patterns while maintaining the required phasing of events to support incremental activation of the RDB. Additionally the Air Force has collocated the Program Office and the user development office with the contractor. In this manner, the Air Force can become involved in the review process earlier in the development cycle and can incrementally review and approve the accomplishments of the contractor.

Question. The Committee understands that 4 RDB systems are to be delivered in April 1986 and one in June 1986. Will these be operational systems or systems that have to be tested and validated?

Answer. The four systems scheduled for delivery in April 1986 began testing in January 1986 and will not be accepted until validation testing is complete, currently scheduled June 1986. The system scheduled for delivery in June 1986 is in development and will not be accepted until it has passed validation testing currently scheduled for July 1986.

Question. How long will it take the Air Force to make these systems operational?

Answer. After Air Force acceptance of the software, implementation will take one to three months. This schedule includes initial training of the functional user, file loading or conversion, and updating the system documentation.

Question. What is the effect on the future RDB development of the system?

Answer. There is no impact on the future development schedule. Testing, implementation, and training have been included in the program schedule.

Question. Please explain the failure of the Air Force to adequately test the one deliverable that was received from the RDB contractor.

Answer. The Air Force completely and adequately tested the system prior to acceptance. The contractor first delivered the system for acceptance testing in May 1985. The Air Force started testing and found that the system did not meet the functional requirements and returned it to the contractor for further development. In August, the system was retested and accepted for initial use. Critical system requirements were satisfied. The system capabilities not satisfied in the first release were documented, and a development plan to correct deficiencies was established. Deficiencies were corrected and the system has been accepted. Specific program configuration control procedures were used to manage and direct these efforts.

Question. Why was it accepted if the tests were not satisfactory?

Answer. The system was tested, passed all critical tests, and was ready for operational use when accepted.

Question. Until the tests are conducted, what is happening to the accuracy of the data base and overall integrity of the system?

Answer. The data base is accurate and protected. The Air Force did not accept the system until the data base was correct and protected from unauthorized access and change.

Question. Exactly when will it be fully tested?

Answer. The D062, Depot Data Bank, has been fully tested and was accepted in December 1985.

Question. Why were the required automated system development practices not followed by AFLC in the first option year of RDB system development?

Answer. The required automated system development practices were followed. Because of an original optimistic schedule, the Air Force and the contractor were working some of the steps in parallel, however, at no time was the Air Force going to skip or eliminate required activities. The program schedule has been revised to reduce risk and all activities required to develop, test, and evaluate the system will be performed.

Question. What is AFLC doing to resolve the deficiencies identified in the first year testing for software programs which have already been formally accepted?

Answer. No software programs have been formally accepted without a plan for resolving deficiencies noted in testing. The Air Force will continue to resolve all deficiencies identified and documented during testing before initial implementation. The resolution may result in a future block change or a delay in implementation depending on the nature of the deficiency.

Question. Why did AFLC settle for less than what was contracted for during the first year of RDB development?

Answer. The Air Force has not settled for less. We have adjusted the program schedule and directed retest of systems rather than compromise on the requirements. The first system, DO62 Depot Data Bank, has been accepted and satisfies functional requirements. It has been in the field for almost six months and is widely accepted. Usage figures and training are increasing. No structural flaws have been identified and the data are accurate and available.

NAVY PERSONNEL AND PAY CENTER CONSOLIDATION (PERSPAY)

Question. PERSPAY consolidates and upgrades computer equipment for the Navy Finance Center and the Naval Military Personnel Command. $176 million will be expended on this effort through FY 1991.

Does the Defense Department agree with the GAO's briefing report to the Committee on Consolidation of Navy's Personnel and Pay Computer Resources dated March, 1986 that the PERSPAY program to date has not met the objectives stated in Committee reports?

Answer. Except for the procurements taking 18 months longer than expected the progress of the Personnel and Pay Systems Consolidated Computer Center (PERSPAY) Program to date is consistent with the plan, objectives, and milestones presented to the Subcommittee on Defense in April 81.

The General Accounting Office (GAO) Briefing Report addresses three sets of objectives:

"Pre-PERSPAY Period" objectives related to "economies of scale and savings." Economies of scale have been realized "in (1) computer operations personnel, (2) computer hardware costs, and (3) total space requirements." Without the PERSPAY Consolidated Data Center (CDC), supporting the current mission requirements of the Navy Military Personnel Command (COMNAVMILPERSCOM) and the Navy Finance Center (NAVFINCEN) would not be possible without substantial increases beyond current funding for computer personnel, equipment maintenance, and floor space.

PERSPAY Program Objectives. The PERSPAY Program has already met all of its objectives except two. The only two not yet met are: transition of all user-specified applications systems to the center's automatic data processing (ADP) equipment, scheduled for completion by October 86; and, evaluation/establishment of the funding methodology for the resultant center, which is dependent upon completion of the applications systems migration.

"The more encompassing consolidation objectives expected by the Subcommittee." "Consolidation of ADP equipment" has been completed to the economically optimal extent. For example, high-speed transmission of data files, each of which can be used locally to produce many different reports, to remote input-output processors is much more efficient and economical than any of the other technologically feasible options. "Classified applications will remain at COMNAVMILPERSCOM" because it would be both less effective and more expensive to secure the entire Consolidated Data Center and the communications media for the sole purpose of processing classified information used only at COMNAVMILPERSCOM. "Integration was not a PERSPAY goal," but is a Navy goal set forth in SECNAVNOTE 5230 of 16 May 84. Studies to determine the best approach to integration have been initiated by the CDC, NAVFINCEN, and COMNAVMILPERSCOM community.

Question. What is the status of personnel/pay data base integration?

Answer. Officials from the Navy's Office of the Comptroller and Total Force Information Systems Management Division (OP-16) have held joint planning sessions to develop a personnel and pay systems integration strategy. A common integrated software suite has been competitively procured and is being installed on the CDC computers to provide a common software foundation for integrated systems. A Data Base Council including representatives from the personnel and pay communities has been meeting regularly to define common procedures and standards for the integrated environment.

The Department of Energy's Oak Ridge National Laboratories (ORNL) are providing contractual support for the definition and accomplishment of the personnel and pay integration effort. Recent analyses indicate 10–17 percent commonality of data elements and a requirement for a three dimensional approach. The first dimension involves the sharing of common tables and data file. The second dimension involves the establishment and common use of the data elements which are integral components of the Integrated Military Personnel Data Base (IMPDB). The IMPDB is a data base of universal information required for all Navy service members. The third dimension involves a comprehensive data-oriented analysis of the Military Personnel, Manpower, Training, Pay and Financial Management worlds utilizing strategic data planning methodologies and distributed data bases that will incorporate expanded network technologies and reduce overall data element redundancy, inaccuracy, and requirements.

The third dimension will provide the data required for a comprehensive competitive procurement of hardware and its associated peripherals and operating environment to ensure compatibility among the key users.

Question. What percentage of data elements is common today?

Answer. An actual percentage of data elements which are common today cannot be provided at this time. Prior studies have resulted in figures which range from 10 to 17 percent, however, these reviews covered only the elements common to the active systems and have not included any analysis of the inactive systems which include reservists and retirees, and other Manpower, Personnel, and Training requirements. In addition, continuing changes to information requirements make any precise percentages invalid.

Question. What are you doing to standardize them in the future, and what is your percentage goal for common data elements?

Answer. We are now in the process of building a data architecture which will provide a logical data model of the pay and personnel data bases and show the entity relationships common to pay and personnel. Navy does not anticipate setting a percentage goal for standardizing data elements. However, maximum standardization will be an outgrowth of the data architecture currently being undertaken. Where we have already established commonality between the pay and personnel systems, the pay and personnel communities are jointly developing the standards required for effective data base implementation. In addition, all pay and personnel data elements are being registered into one software dictionary system to facilitate this standardization.

Question. Describe your plans for hardware replacement in the future.

Answer. The replacement of the installed data processing hardware at the Consolidated Data Center in Bratenahl, Ohio, and the associated distributed processing centers at the Federal Office Building in Cleveland, Ohio, and the Arlington Annex in Arlington, Virginia, is an area that is being explored over the next year as part of an overall look at future requirements. Both NAVFIN-

CEN and COMNAVMILPERSCOM personnel are participating in the definition of this scope. Efforts have been initiated toward pursuit of a fully-competitive procurement for award in the 1990 timeframe. ADP equipment ownership, age of the installed ADP equipment by the projected award date, installation phase-in requirements, and coversion costs are only a few factors involved in the follow-on procurements. Although not a part of PERSPAY, the emphasis on integration in the Navy makes it necessary to fully analyze the entire network in order to determine the compatibility required of all equipment and associated software to be procured. A comprehensive and definitive requirements analysis will be conducted to define the computer capacity requirements. Life cycle management documentation is being used to realistically and accurately project future work load. Using this information it is planned to develop a functional specification and conduct a follow-on procurement in accordance with the precepts of the Competition in Contracting Act of 1984.

Question. Will it be fully competitive?

Answer. Our goal is to have all responsible sources compete for the buy.

Question. If the Committee requires the Navy to achieve full integration of the pay and personnel data bases, as was envisioned in previous Committee reports, what is the latest date on which the complete integration would have to be accomplished prior to beginning a competitive hardware upgrade?

Answer. It is development of the integrated data architecture that must be accomplished to define the requirements for the upgrade procurement, not the full integration of the data. The Navy is currently developing the architecture for the pay and personnel data and systems integration.

Integration describes a state in which all parts bear a harmonious relationship with each other and the whole. In order to accomplish full integration Navy cannot merely consolidate existing corporate data elements into a single location without also analyzing the data flows from and to major field users of that data and incorporating them into a network administered and controlled by a central host processor located at the Consolidated Data Center in Bratenahl, Ohio. It is Navy's intention that the upgrade procurement support the full integration effort, even though that effort is much more complex than the mere consolidation of the data bases around the few common data elements.

Question. Do you plan to accomplish full integration of the data bases prior to beginning the competitive hardware upgrade?

Answer. The integration effort will be pursued using a three-dimensional approach.

Dimensions one-sharing common tables and data files and two-establishment and shared use of the data elements which are integral components of the Integrated Military Personnel Data Base will be accomplished in the existing hardware and software environment.

The first part of dimension three, the comprehensive analysis and identification of a Personnel, Pay, Manpower, Training, and Financial information systems architecture, must also be completed in order to define the required hardware, software and telecommunications environments for inclusion in the procurement specifications. Implementation of this fully integrated architecture, however, will probably be dependent on completion of the procurement.

Question. What current systems and/or capabilities are to be replaced under the competitive hardware upgrade?

Answer. The required scope of the upgrade procurement has yet to be defined. Since the scope of full integration requires a "harmonious relationship" between all processors in the network we must determine which remote nodes in the network must be included in specifications for the buy to ensure compatibility between all of the data processing equipment and the distributed data bases.

Question. To what extent is an open competition expected, given the current status of Navy operations on IBM equipment?

Answer. The application of the Department of Defense, Navy, PERSPAY and the Consolidated Data Center standards requiring that automated information systems being developed or converted employ only Department of Defense approved high-order programming languages, i.e., Common Business Oriented Language, and that environmental and operating systems and proprietary software not be user-modified will ensure an environment in which many vendors will be able to compete.

Due to the requirement for the procurement to include full integration, Navy will pursue a life cycle procurement for a level of service over the life cycle that may be independent of any single vendor. Since the winning vendor will be required to ensure compatibility throughout the entire network, that may necessitate dividing equipment and software between products of multiple vendors. Navy has been successful in this type of procurement in the past.

Question. Is integration of the personnel and pay systems the most efficient, cost-effective and reliable way to accomplish what the Navy needs?

Answer. The information resources industry identifies strategic data planning as the most efficient and cost-effective technique for controlling data accuracy and integrity. Strategic data planning methodology is being pursued by Navy through all three dimensions of the integration initiative.

Process will provide for integrated tables, files, and data elements through a distributed network providing interoperability between a centralized corporate data base in the Consolidated Data Center and its multiple parts resident in smaller systems scattered around the country. These smaller systems currently hold inaccessible portions of the data needed for more efficient, responsive and accurate accountability and reporting.

Question. What alternatives exist?

Answer. Alternatives could include lesser variations of dimension three but would not produce the degree of integration desired by Navy.

Alternatives follow:

Sharing common tables, files and the data element subset common to the pay and personnel communities. This will be accomplished as Navy moves through the second dimension of the integration plan. It will not incorporate other data needed for full integration that are currently resident in remote field data files. Additionally, it will not include data pertaining to Manpower, Training, Financial Management and Accounting that are necessary to manage the Military Personnel, Navy appropriation.

Sharing common tables and files. This will be included in the first dimension of Navy's integration initiation. However, to stop at that point would not bring about any actual integration of pay and personnel data.

Maintaining the status quo. No further progress toward integration. This is least costly but will cause increases in data inaccuracy as new means of transmitting data increase throughput speeds for processing on the host processor.

Question. How long will NFC and NMPC maintain large, independent computers?

Answer. The computers at NAVFINCEN and COMNAVMILPERSCOM are not independent computers. They are currently linked to the Consolidated Data Center computers by communications lines over which data are transmitted regularly. The automated information systems which have been migrated to the Consolidated Data Center are processed on the Consolidated Data Center computers using input data files from COMNAVMILPERSCOM and/or NAVFINCEN and the results of the processing are then transmitted back to NAVFINCEN and/or COMNAVMILPERSCOM. This high-speed transmission of data files, each of which can be used locally for several purposes, to remote input-output processors is currently more efficient and economical than any of the other feasible alternatives.

Question. Why is NMPC-47 allowed to acquire its own computer resources, independent of the PERSPAY project?

Answer. Navy's military personnel distribution systems involve the assignment and distribution of Navy officers and enlisted personnel. These systems will run on end-user computers funded and acquired by COMNAVMILPERSCOM independent of PERSPAY. The old methods which supported these functions were largely manual and serviced by batch processes. These methods are currently being replaced by the Navy Military Personnel Distribution System (NMPDS) which is a series of distributed end-user developed systems which provide more efficient, less labor intensive support to the assignment and distribution functions which COMNAVMILPERSCOM performs. The system is being designed and implemented using methodologies and technologies which allow the end-user to incorporate changes and satisfy mission requirements in an integrated and timely manner. NMPDS has been budgeted and approved based on compliance with COMNAVMILPERSCOM life cycle management requirements.

Question. Were NMPC-47 processing requirements included in the original PERSPAY planning?

Answer. NMPDS requirements were never included in the original PERSPAY planning.

Question. Describe in detail major tasks to be accomplished with the FY 1987 PERSPAY funding requested of the Congress, by appropriation.

Answer. Following completion of a Military Construction Project for the Consolidated Data Center in June 87, the last major installation of computer hardware procured under PERSPAY will be installed. This will include a fourth IBM Model 3081 mainframe computer, additional disk drives, and other ancillary equipment. Investment funding under the Other Procurement, Navy appropriation is necessary to effect these purchases, which will provide the required operational computing capacity for the Navy's personnel and payroll systems.

Completing migration of the COMNAVMILPERSCOM information systems to the Consolidated Data Center in accordance with the PERSPAY plan is also a priority task for FY 87.

FY 87 will also see continuation of the process of defining requirements for a fully competitive procurement that will eventually determine the configuration needed to implement Navy's fully integrated strategy for Pay, Personnel, Manpower, Training and Financial Management.

During FY 87 the Consolidated Data Center will also be providing extensive data processing services to both the NAVFINCEN and COMNAVMILPERSCOM. The bulk of the Operation and Maintenance, Navy appropriation funding for PERSPAY is spent on operational requirements, including maintenance of owned equipment and salaries of operational personnel.

Question. Provide for the record the amount appropriated, currently unobligated, and forecast for obligation of the FY 1986 PERSPAY procurement funding.

Answer. Thus far $5,666,000 of the $8,747,000 appropriated has been obligated under the Other Procurement, Navy appropriation. The remaining $3,081,000 will be fully obligated by 4th QTR FY 1986.

UNIFORM INVENTORY CONTROL POINT REDESIGN

Question. The Uniform Inventory Control Point Redesign is a $550 million life cycle Navy logistics program.

The Navy requested $7.7 million in FY 1986 and $8.8 million in FY 1987 to upgrade computers at the inventory control points, including office workstations, minicomputers, personal computers, and office networking devices, and large scale computers.

Is all of this equipment being leased under contract from Electronic Data Systems?

Answer. All of the equipment is being acquired under the contract with Electronic Data Systems, but some equipment is being purchased and some is being leased.

Question. Does the Navy plan to procure all of the minicomputers, personal computers, and office work stations now under lease?

Answer. The Navy is actively working toward a buy-out of those devices currently in a lease status which are more appropriate to buy.

Question. What is Navy's rationale for procuring certain computer components while leasing others?

Answer. The ICP modernization program has been structured to sustain a continually refreshed technology base from which to operate, maintain, and extend the automated logistics systems used to manage the Navy's $29 billion inventory. Under this concept, hardware and system software components of the system are incrementally replaced as their technological successors are introduced into the marketplace. Leasing has been demonstrated to be less expensive than purchasing for the technology suite as a whole under the terms of the contract with Electronic Data Systems. However, analysis of the lease and purchase alternatives at the component level shows some equipments should be purchased and some should be leased. System components such as terminals and workstations have a relatively long period of technological stability and usefulness. These are good candidates for purchase. Other components, such as mainframes, are more volatile technologically and leasing is less expensive over their installed life.

Question. Has the Navy performed an economic analysis to justify its ICP leasing decisions?

Answer. Yes. The Navy has performed a lease versus purchase analysis as part of its life cycle management documentation.

Question. Summarize it for the record.

Answer. In the analysis, the stream of technology projected to meet ICP modernization requirements over the eight year period covered by the contract with Electronic Data Systems was costed both on a lease basis and on a purchase basis. The results show the lease alternative to be approximately $2 million less expensive than the purchase alternative. Additionally, the Navy does an annual lease versus purchase analysis on all installed devices at the component level to ensure that the most economic alternative is implemented for each piece of equipment. Completion of these analyses is a precondition of the annual contract renewal with Electronic Data Systems.

Question. When will the redesigned Weapons Systems File become operational?

Answer. The redesigned Weapons Systems File (WSF) will be operational in the first quarter of calendar year 1989.

Question. Name the automated systems that will be replaced once the redesigned WSF becomes operational.

Answer. The automated systems which will be replaced once the redesigned Weapon System Files, WSFs, become operational are the current ship and aviation WSFs at the Ships Parts Control Center, SPCC, and the Aviation Supply Office, and the ship's Weapons System File Download, WSFD, at SPCC.

Question. How much O&M funding will be saved by the replacements?

Answer. The redesigned Weapons Systems Files, WSFs, will provide the configuration development monitoring, configuration status accounting, and a centralized repository for logistic data covering the 547 ships in service and the more than 5,400 aircraft. These data support the multi-billion dollar Navy shipbuilding and overhaul initiatives, as well as annual repair parts procurements in excess of $10 billion dollars and inventory levels of greater than $29 billion. Additionally, the redesigned system will permit the Navy to expand its configuration status accounting programs to the Navy shore establishment, thereby improving the accuracy and timelines of shorebased logistic support. A very small performance improvement of less than 1% in the accuracy and availability of this data could yield savings of up to $100 million across the Navy.

Question. Do current plans call for planning yards to acquire computer hardware to assist them in validating WSF transactions?

Answer. Current plans call for Navy Data Automation Command, NAVDAC, activities to provide local ADP support to the planning yards to assist in the performance of some of their basic mission functions, including the validation of WSF transactions. Validation of WSF input transactions will be performed by planning yards during data entry.

Question. How much will this hardware cost and how does Navy expect to fund it?

Answer. This support will be provided under the Navy geographic ADP support concept and will be accomplished on hardware acquired for that program. The cost of NAVDAC support for planning yard functions on NAVDAC computers is $285,000 per year which will be funded from NAVSEA's Ship Configuration and Logistics Support Control program.

Question. If existing automated systems need to be redesigned to interface with the WSF, how much will the redesign be funded?

Answer. Existing automated systems will not need to be redesigned to interface with the WSF.

Question. How much will it cost to redesign existing systems so they can interact with the WSF?

Answer. Since no system need to be redesigned, there is no cost.

STOCK POINT ADP REPLACEMENT

Question. The Navy has two ADP initiatives to modernize its stock point logistics activities at a life cycle cost of $1.7 billion. These are known as SPAR, Stock Point ADP Replacement, and SPLICE, Stock Point Logistic Integrated Communications Environment.

What ADP and telecommunication initiatives did the Navy identify in the 43A/B exhibits that identify funding requirements for planned procurement or systems design and development efforts related to planned improvements at Navy stock points and inventory control points?

Answer. Planned improvements at Navy stock points and inventory control points identified in the 43A/B exhibits are SPLICE, SPAR, and Inventory Control Point, ICP, Resolicitation.

Question. Cumulatively, how much money is Navy requesting for ADP and telecommunications initiatives that affect the stock points and inventory control points?

Answer. The cumulative amounts requested by the Navy for ADP and telecommunications initiatives, for SPAR, SPLICE, and ICP Resolicitation are $59.5 million for FY 85, $81.9 million for FY 86, and $99.0 million for FY 87.

Question. What other logistics ADP procurements or design initiatives affecting the stock points and inventory control points are included in the FY 1987 budget but not represented in the 43A/B exhibits?

Answer. There are no other logistics ADP procurements or design initiatives affecting the stock points and inventory control points.

Question. What is the total cost of each of these initiatives by appropriation and line item?

Answer. As indicated above, there are no other logistics ADP procurements or design initiatives affecting the stock points and inventory control points.

Question. In what fiscal year can the Committee expect to see evidence of lower operating costs in Navy O&M resulting from this automation?

Answer. The modernized automated logistics support systems for inventory control points will become operational in FY 89 and modernized stock point logistics support systems will become operational worldwide by the early 1990's. Operation of these new systems will provide for activity operating benefits reflected in increased competition in procurement, greater inventory accuracy, improved inventory management, improved accountability and financial integrity by facilitating more effective and efficient use of available resources.

Question. Will funds from other initiatives be used to support SPLICE?

Answer. Yes. Stock Point Logistic Integrated Communications, SPLICE, provides a vehicle for the execution of several initiatives which are important parts of the total modernization effort of the Navy supply system and which are critical to improving the efficiency of system operation while sustaining the newly achieved levels of system effectiveness. Economies of scale are realized by using the multiple capabilities of SPLICE to accomplish several related functional improvements in a single date processing suite.

Question. Identify these initiatives and how much in support funding is provided by each in fiscal years 1985 to 1987, by appropriation.

Answer. There are five other funding lines for programs which rely on SPLICE to accomplish their mission improvements. These projects and funding are:

Automation of Procurement and Accounting Data Entry System, APADE. APADE is the Navy's project to correct several longstanding problems in field procurement. Each year the Navy buys more than $10 billion in goods and services through its field contracting offices. Recent national attention has focused on several examples, such as the $600 ashtray, where a lack of good information on equipment price history and the cumbersome process of accurately identifying whether a suitable alternative exists in the supply system have led to the Navy buying non-competitively and paying several times the best price. By providing the contracting officer with a wide-range of up-to-date information on sources and prices and by simplifying the administrative workload associated with the procurement process, APADE greatly improves the level of competition in procurements and reduces the overall cost of Navy field purchases. Even a reduction of only 1% in the average cost of goods and services will lead to a savings of more than $100 million. Initial funding for APADE is in the SPLICE budget. Separate funding begins in fiscal year 1988.

Defense Data Network, DDN. DDN is the standard DOD system to provide intersite telecommunications worldwide. DDN capitalizes on the improved operational efficiency realized by providing a single system for use by all the armed services and multiplies the effectiveness of systems it supports by providing fast, flexible, and reliable data communications. SPLICE is the single standardized Navy logistics telecommunications system which interfaces with DDN to interconnect all elements of the supply system. By reducing the time and human effort involved in telecommunications, SPLICE and DDN can help to reduce pipeline and redundant inventory investments and facilitate the further integration of the Navy's $45 billion supply business. The DDN OPN funding line is $4.4 million in FY 86 and $1.5 million in FY 87. The DDN O&MN funding line is $1.9 million in FY 86 and $2.5 million in FY 87.

On Line Autodin, OLA. OLA was initially implemented to exploit the greater accuracy and improved operational performance of Autodin I, the existing standard DOD telecommunications network. Current intiatives involve transitioning functions which use Autodin I to DDN, the new, more efficient and effective standard DOD telecommunications system. The Navy manages more than 13 million transaction item reports annually. These reports are telecommunicated several times daily by 45 activities to facilitate the central management of the quantities, locations, receipts and issues of most of the $29 billion worth of inventory. Through OLA and SPLICE, the speed and accuracy of these reports will be dramatically improved. In turn, these improvements should aid in reducing the costs of inventories while sustaining supply system effectiveness and fleet readiness. The OLA OPN funding is $3.1 million in FY 86. The OLA O&MN funding is $0.1 million in FY 86 and $1.6 million in FY 87.

Presidential Private Sector Survey on Cost Control, PPSSCC. The Grace Commission concluded that the Navy supply system could improve inventory accuracy by reducing errors introduced by lack of effective source data automation. Funding provided through PPSSCC has allowed the Navy supply system to improve inventory accuracy by including the transaction ledger at stock points on SPLICE. The order of magnitude improvement in performance afforded by SPLICE has significantly contributed to recently improved inventory accuracy. Gross monetary adjustment has dropped from over 10% a few years ago to less than 3.5% this year on an inventory of $29 billion. These improvements have helped the Navy effectiveness while saving taxpayers dollars. PPSSCC O&MN funding is $2.79 million in FY 85, $1.3 million in FY 86, and $1.3 million in FY 87.

"G" Condition. "G" Condition is a project within SPLICE to improve the management of repairable components entering the repair cycle. The Navy manages $15 billion in repairable items with an average repair cycle turn around time of up to 5 months. Substantial improvements in accuracy and reductions in stock investment to cover total turn around time are achievable through automation of the current paper bound management process. "G" Condition OPN funding is $1.11 million in FY 87.

Question. Why aren't support initiatives being funded as part of SPLICE?

Answer. While part of the automation of these functions is supported by SPLICE, other aspects such as training and peripheral equipment are acquired separately. Total costs for the automation of these functions are separately tracked and managed. Through the robust capabilities of SPLICE, the host computer automation portions of these efforts can be done cooperatively and, hence, more efficiently.

Question. Would these support initiatives be necessary if SPLICE were terminated?

Answer. Yes, because each of these functions is a part of the total supply system modernization effort to improve system efficiency while sustaining the improvements in effectiveness. Because of the economies of scale evolve from using SPLICE's multiple capabilities, expandability, and flexibility, automation of these efforts through some other means would result in more costly programs.

Question. How does the Navy currently measure the contribution of automation to its stock point and inventory control point operations?

Answer. Stock points and inventory control points measure the contributions of automation using both efficiency and effectiveness measures. Projects currently underway to modernize the Navy's automated systems will significantly improve efficiency of the stock point/inventory control point operation. These efficiency improvements will provide the major benefits to be realized from the modernized logistics systems and are reflected in various individual measures. Productivity resource rates, procurement competition statistics, overhead rates, labor utilization data, cost per transaction data, responsiveness statistics, and inventory accuracy measures are all used to measure the contributions of the modernized logistics systems. Increased system effectiveness in combination with these efficiency improvements are, in fact, the primary reasons for modernization. Payoffs are expected to be significant, as evidenced by the interim automated enhancement of receipt processing recently implemented on SPLICE that resulted in solid improvements in receipt processing time. When the modernized systems are in place we will be able to accomplish our mission at a lower overall cost.

Question. How do stock point and inventory control point operations tie to mission readiness, sustainability, and interoperability?

Answer. Mission readiness, sustainability and interoperability are dependent on inventory control point and stock point operations. Full visibility of assets, rapid replenishment and transaction reporting, tight process control in warehouse operations, and interoperability between Navy sites and with other services are key elements of the strong logistic support necessary to maintain mission readiness, sustainability and interoperability. The Navy's war fighting capability is directly linked to and dependent on stock point and inventory control point operations.

Question. What quantitative measures are used?

Answer. The performance of the supply system is measured by its responsiveness to fleet requirements in terms of fundamental statistics such as supply effectiveness and response time. Mission readiness, which is impacted by stock point and inventory control point operations, is measured by mission capable statistics. A stock point's ability to support sustained operations is essential to successfully fighting and winning a protracted conflict. When they are completed, the Navy's supply system automation projects will accomplish this at a lower cost.

Question. What studies and estimates does the Navy have to document the degree of improvement to mission readiness, sustainability, and interoperability that should result from its automation initiatives?

Answer. The primary purpose of the Navy's automation initiatives is to effect numerous significant improvements that will be dramatic and have far reaching impacts on both the inventory control point and the stock point operations. Data integrity, efficient process control, interoperability, and many functional enhancements will combine to improve both efficiency and effectiveness. These factors are essential logistic elements of mission readiness and sustainability. They are directly tied to the critical success factors in both stock point and inventory control point operations, such as inventory accuracy, security, accountability, improved responsiveness, and strengthened competition. Interoperability through improved communications and integrated system design will further enhance the Navy's ability to use all stock points as an integrated Navy system and maximize the Navy's use of the DOD logistic system.

An initial assessment of the improvements that should result from these automation initiatives is contained in life cycle management. These analyses will be amplified during the system design cycle; however, numerous studies and analyses conducted in conjunction with recent events have underscored the need for major automation improvements. The USS KITTY HAWK investigation and related studies, as well as the Iranian Theft Ring Investigation, repeatedly addressed deficiencies in security, accountability, and inventory accuracy that can be offset today only by labor intensive and costly human intervention. Efficient correction of these deficiencies can be realized only through the modernization of the Navy's automated logistics systems. One of the first steps in this modernization process, the enhanced receipt processing capabilities of SPLICE, documents that such improvements are attainable.

Question. The Committee understands that software applications are being converted from the Burroughs computer to SPLICE Tandem computers which are being procured to enhance communication at and between the stock points. When the equipment in the SPAR project is installed, these applications will have to be reprogrammed again. Mr. Springett, what is your rationale for this strategy?

Answer. In 1983, the Navy began execution of a multi-year effort to modernize its antiquated and functionally decrepit automated system, a system characterized by the Grace Commission as "museum worthy," which supported the supply system. A critical part of this effort was to improve the computer equipment performance in order to improve overall supply system effectiveness. To achieve this automation improvement, some of the paper-bound and time-critical functions were shifted from the Burroughs environment to the Stock Point Logistic Integrated Communication Environment, SPLICE, system which is designed to optimize interactive processing. This has resulted in acceptable performance from the Burroughs system by reducing the burden on that system.

More importantly, the improved effectiveness provided by SPLICE has enhanced efficiency in several functional areas. The two key examples of this workload transfer are the movement of the transaction ledger to SPLICE and the support of the material receiving function on SPLICE. In both cases, more timely computer actions have multiplied system efficiency and effectiveness. The transaction ledger processing is the key tool to reconcile inventory inaccuracies. Gains and losses by inventory have dropped over the past few years from more than 10% to less than 3.5% on an inventory valued at $29 billion. The improved automation of the receiving function has led to a high on-time stowage rate. A faster, more accurate receiving function reduces the material pipeline and total inventory investment.

The software applications converted from Burroughs to SPLICE will not be reconverted to SPAR. The efficiency improvements provided by SPLICE have bought the Navy the critically needed time to fix its functionally deficient and fragmented systems, now more than 25 years old, and to design a single, integrated, standard, and broad-based system to be used at more than 100 activities worldwide. This redesign effort employs proven information engineering and data base design techniques used by private sector industry's most successful enterprises. The redesign in SPAR will offer improved efficiency of operation while sustaining the improved supply system effectiveness. An effort of this magnitude takes several years. The improvements offered by SPLICE have provided the time to complete the modernization and thus will allow the Navy to fully achieve improved efficiency.

Question. How was it determined to be economically and technically feasible?

Answer. Technical feasibility was planned into the SPLICE acquisition and has been proven in the early implementations of SPLICE. The economic viability stems from the reasonable payback periods of three to eight years across a business base of $29 billion in inventory, more than 12 million issues and receipts annually, and more than $10 billion in field system procurement each year.

Question. Will the software used to support the hardware procured for the modernization at the stock points and inventory control points be a conversion of the current application programs or a redesign that will take advantage of the new hardware capabilities?

Answer. The application software provided to support the stock point and inventory control point automated logistic support system modernization programs will be a complete and innovative redesign of the current systems, taking full advantage of the capabilities of new hardware and environmental software. The Navy has instituted the use of the most modern design techniques, such as information engineering, and installed the best automated design support tools to assure that systems are developed which provide a flexible design base that will effectively support the Navy for the next several decades. Since continued fleet support cannot be left to risk, the current applications software is also being converted to provide full backup capability and allow the Navy the flexibility to take advantage of new equipment capabilities such as increased speed and capacity, until the modernized applications systems are completely developed and tested.

Question. How do you plan to evaluate the efficiency of the new software versus the current software?

Answer. In accordance with DOD Life Cycle Management, LCM, regulations, practices and procedures, new automated information systems must be thoroughly field tested both technically and functionally before authorization will be granted to deploy them for general use. The Navy will operate new software on a test basis at the prototype activity, in parallel with the current software, to assure that operational efficiency conforms with design parameters. Upon satisfactory completion of system shakedown, appropriate substantiating LCM documentation will be forwarded to higher authority requesting permission to deploy.

Question. Provide an estimate of the potential overall conversion and redesign costs associated with the ultimate implementation of SPAR.

Answer. Conversion and redesign costs associated with SPAR are $173 million. This encompasses an application software modernization program initiated in 1983 with expenditures to date of approximately $11 million. The benefits which accrue from more efficient management of the $29 billion inventory are expected to quickly offset redesign costs through greater inventory accuracy, security, system responsiveness, and data integrity. A 1% improvement in managing this inventory will more than offset this cost.

Question. Now that the Burroughs processors have been upgraded and additional telecommunications equipment has been added at the major stock points, why does the Navy need SPLICE processors for local communications?

Answer. The upgrade to the Burroughs system did not provide telecommunications equipment. This is provided by SPLICE.

Question. What mission studies, analyses, or information system requirements exist to support this strategy?

Answer. During the formulation stages of the SPLICE project several analyses were done to determine the best approach to providing telecommunications support. The Navy concluded that an efficient approach for providing telecommunications to both the current and future Navy stock point systems was to provide a single suite which would accomplish both local and intersite telecommunications to support, among other things, the receiving, error correction, and transaction reporting functions. Since SPLICE provided intersite teleprocessing, efficiency and simplicity were achieved by connecting terminals directly to SPLICE and by eliminating other terminal-concentrating and front-end-processing equipment. This allowed a terminal at site A, say Naval Supply Center, Norfolk, to access data at site B, say Defense Logistics Services Center, without passing through or burdening the stock point system. Total system connectivity and data sharing will result in reduced inventory investment and fewer short-fused expensive procurements. Additionally, this strategy simplified integration of SPAR into the telecommunications system.

Question. Why are the new processors inadequate, and what documentation supports this conclusion?

Answer. We assume this question refers to the Burroughs computer upgrade at Navy stock points. The Burroughs processors were adequate for the purpose for which they were procured. These processors provided sufficient capacity to eliminate chronic, longstanding, debilitating workload backlogs, but did nothing to improve stock point efficiency or enhance local or global communications needed to optimize the operation of the Navy supply system through reduced inventory investment and waste associated with inventory inaccuracies. No new Burroughs teleprocessing equipment was acquired because the SPLICE equipment was being bought for that purpose. The Burroughs equipment acquired cannot provide the needed multi-system and Defense Data Network interoperability.

Question. How does the Navy measure the benefits provided by SPLICE to the stock point telecommunications operation?

Answer. Automation is an inseparable part of the performance of the Navy supply system and enhanced teleprocessing capabilities are needed to efficiently interoperate with DOD's standard telecommunications system. Consequently, a single, standard teleprocessing system, SPLICE, is the cost-effective approach. SPLICE provides the Navy with a standard telecommunications system which reduces costs associated with maintenance of multiple hardware and software systems while it provides improved computer response time, throughput, integrity, flexibility, reliability, and security.

Question. What requirements are not being met by processor upgrade and peripheral replacement programs at the stock points that require purchase of SPLICE equipment?

Answer. As stated above, SPLICE provides standard local and inter-site telecommunications. Moreover, SPLICE provides a standard minicomputer environment for stand-alone minicomputer software applications, and, in conjunction with the Burroughs upgrade, provides an enhanced transaction processing capability which improves terminal response time and workload throughput and which pays off in increased labor productivity, material availability, and inventory accuracy.

Question. What precisely will SPLICE contribute to solving Navy supply management problems and deficiencies?

Answer. SPLICE provides the following seven capabilities. First, SPLICE provides standard, efficient and reliable local telecommunications to both the current and future Navy stock point systems. Second, SPLICE provides standard reliable multi-system and multi-site telecommunications throughout the Navy supply system. This includes both stock point and inventory control points. Third, SPLICE provides efficient connectivity and interoperability with the standard Defense Data Network telecommunications system. Fourth, SPLICE provides efficient interoperability with the Defense Logistics Agency supply system. Fifth, SPLICE provides for direct communication between disparate mainframe host systems within a single site. Sixth, SPLICE provides an efficient, standard minicomputer environment to support multiple stand-alone minicomputer software applications in a cost-effective way. Seventh, SPLICE augments Burroughs processing, providing an efficient transaction processing environment which facilitates interactive processing and reduces reliance on manual, paper-bound interfaces. Additionally, since SPLICE incorporates all of these missions in a coupled, expandable, minicomputer environment, economies of scale are achieved as workload and applications increase.

Question. Are these documented?

Answer. These mission capabilities are called out in current Navy strategic planning for data processing and are further documented in Naval Supply Systems Command Strategic Plans and in SPLICE project plans. The real payoffs in these improved capabilities are the potential reductions in inventory investments and improvements in inventory accuracy. Moreover, SPLICE provides the Navy supply system the flexibility required to support strategic homeporting, to satisfy mobilization needs, and to accommodate a workload surge in the event of a sudden war.

Question. Mr. Springett, the Committee understands that the Navy has not conducted operational tests at each SPLICE site as planned, and that the contractor's system did not pass the test performed at NSC Jacksonville. Why would this not prompt the MAISRC to consider revoking oversight delegation authority?

Answer. On April 2, 1986 the OASD(C) issued a firm set of criteria for determining the conditions under which previously delegated management oversight authority should be withdrawn. We have not yet evaluated the specific facts of the situation for this program to see what action may be needed.

Question. Mr. Springett, why is the Navy revising its SPLICE implementation plan and schedule by deferring development of the Defense mandated connectivity to the Defense Data Network?

Answer. With regard to SPLICE's Defense Data Network, DDN, interfaces, the delays in this SPLICE capability have been caused by delays in implementation of DDN, due in large part to the divestiture of AT&T. SPLICE is one of a handful of Navy systems certified to operate on DDN. Development of SPLICE's DDN interfaces has been synchronized with delivery of the basic DDN services. Prototype connection of SPLICE to DDN is in place at three Navy activities.

Question. The Navy's FY 1987 budget includes $4.4 million in other procurement for adding SPLICE to six Naval Supply Centers. How did the Navy determine that these systems were needed?

Answer. The equipment bought for initial SPLICE configurations includes that required to perform local and global telecommunications and security functions, and represents the minimum SPLICE configuration. Equipment is added to SPLICE configurations when workload growth is forecasted. This workload growth is driven by the inclusion of stand-alone minicomputer software applications, such as those for procurement and material shipment, the inclusion of transaction processing applications shifted from the Burroughs such as those for material receiving and inventory error reconciliation, and increases in workload caused by the addition of terminals to the site.

Question. Are there sizing studies to justify these configurations?

Answer. The Navy has done sizing studies to determine the proper SPLICE configurations. The amount of equipment added to a site is based on these sizing study estimates modified by up-to-date requirements forecasts based on on-site pre-implementation capacity reviews.

Question. Has the Navy reconsidered its hardware needs based on the updated implementation schedule which reflects delays in the deployment of some SPLICE applications?

Answer. Yes. The Navy SPLICE project office continually revises the SPLICE equipment upgrade and software implementation schedules based on the most current development time lines. These revised schedules are published about once a month to various interested Navy activities and offices. For example, equipment deliveries have been delayed from two to six months, without penalty, in order to coordinate delivery schedules with equipment needs at about half the current sites.

Question. How does the Navy monitor SPLICE usage at installed sites? If it does not, how can it determine what future SPLICE configurations are required?

Answer. The SPLICE office monitors equipment and workloads through site managers and on-site visits and uses this data to modify sizing estimates for future equipment orders.

Question. Explain why some SPLICE equipment, namely at the Navy Supply Center Norfolk and to a lesser degree the Navy Supply Center Oakland, has unused SPLICE hardware. How will unused hardware be reallocated? Has the Navy adjusted for this unused equipment in its planning for future hardware requirements?

Answer. There is no unused SPLICE equipment at NSC Norfolk or NSC Oakland. The SPLICE acquisition incorporates features to accommodate shrinkage as well as growth in workload. Should the Navy find that projected workload growth is not realized or that workload shrinks at a particular site at some future point, the SPLICE contract includes provisions for equipment redistribution to other sites.

Question. Have operational tests, as required by the SPLICE contract, been performed at every site?

Answer. As was discussed in the answer to a previous question, over 200 operational tests are planned over the life of the contract. This is about three or four tests for any given site. When the initial suite of equipment is installed at a site, an acceptance test is run. When the equipment installed at a site is equal to or exceeds the contractually mandated minimum for the first operational test, an operational test is performed. All tests required by the contract have been, or are planned to be, performed. This has resulted in over $500,000 of goods and services being provided to the Navy at no cost.

Question. What are the results of the testing?

Answer. Operational tests have been performed in every case called for in the contract. This includes Navy Regional Data Automation Center, Jacksonville, known as NARDAC JAX, and the Navy Aviation Supply Office, ASO, Philadelphia, and the two test sites. Other tests will be conducted when the minimal testable configuration is ordered and installed for any given site. The tests for ASO and the test beds were passed with equipment projected in the contract. The test for NARDAC JAX was passed after $330,000 worth of equipment was added to the test configuration at no cost to Navy. Use of this additional equipment and its subsequent maintenance has resulted in the Navy receiving $500,000 of goods and services free since June 1984.

Question. How was the response time problem at Jacksonville resolved?

Answer. We believe the response time problem to which you are referring occurred during the operation test. It was solved by the Navy receiving the free equipment referred to above.

Question. Why did the Navy fail to perform operational tests at the other sites?

Answer. As discussed above, the Navy has performed all appropriate tests.

Question. How does the Navy know that the systems will perform as required?

Answer. The Navy uses the operational test procedure discussed in the preceding paragraphs to determine the adequacy of contractor performance.

Question. What was the result of the initial prototype test of the Statistical Location application at Jacksonville?

Answer. The Statistical Location issue is unrelated to SPLICE operational testing as discussed above. The Statistical Location application is one of the Navy developed pieces of transaction processing based software written to operate on SPLICE equipment, thus balancing workload with the Burroughs system. The statistical location application is an important function designed to save taxpayer dollars through improved inventory accuracy. When the application was prototyped, some conceptual flaws were found in it. This occurs with new applications and is the reason for prototyping. The application has been partly rewritten, reprototyped, and now works successfully to support improved inventory accuracy in an operational environment.

Question. Will the SPLICE sites scheduled to receive hardware in fiscal year 1986 be able to use all of it effectively?

Answer. Yes, schedules are carefully maintained to ensure delivery is consistent with requirements.

Question. What is the impact of the slippages on the fiscal year 1986 SPLICE spending program?

Answer. The Navy has adjusted the SPLICE fiscal year 1986 implementation schedule to meet the current software implementation schedule and has adjusted the supporting funding lines accordingly.

Question. How have the slippages affected SPLICE hardware needs?

Answer. Hardware deliveries have been rescheduled to conform with software schedules.

Question. Is less hardware than originally planned now being procured?

Answer. Yes, less hardware than originally planned for fiscal year 1986 is being procured.

Question. How does the Navy plan to use equipment for which software applications have been delayed?

Answer. The Navy will delay the equipment deliveries where appropriate.

Question. How can the Navy ensure that applications scheduled to go on-line in FY 1987 will be ready for use?

Answer. Virtually all of the SPLICE software which will require equipment augmentations in FY 87 has been completed. This includes the transaction ledger, statistical location, material receiving, procurement, disbursing and accounting functions, as well as several other software packages. The Navy tracks software development continually and allocates developmental resources to a degree consistent with the total Navy supply modernization plan in order to keep development on track.

Question. What action is the Navy taking to better coordinate SPLICE hardware and software deliveries?

Answer. Equipment deliveries are closely coordinated with software schedules. OSD and the Navy feel that SPLICE is a well-managed project. This opinion has been formed in part by the findings of two Navy Audit Service audits performed over the past three years. The reports of both audits had no negative findings whatsoever, compliance or otherwise; and both reports praised the project management of SPLICE. The SPLICE acquisition is a model of the competitive process, and its contract contains revolutionary features which minimize government risk and provide flexibility to provide equipment when and only when it is needed.

Question. Mr. Springett, please explain why OSD testified last year that SPLICE life cycle costs are $171 million. Yet the program office estimate for Milestone III is $256 million, and the contract is for $548 million. What is the life cycle cost of SPLICE?

Answer. As reported in the SPLICE milestone III decision paper dated Mar 85 (approved Sep 85), the life cycle cost is equivalently $171 million in constant FY 84 dollars or $256 million in then-year dollars. It is OSD policy to report project life cycle costs in constant year dollars. The contract ceiling value is $548 million. While the Navy will not use the full ceiling value of the SPLICE contract, we believe that having some contractual flexibility for a fifteen year contract with the potential for mobilization or surge needs is prudent.

Question. Has the Navy decided where SPLICE will be installed and what configuration of hardware will be installed at each activity?

Answer. The Navy plans to deploy SPLICE to 41 sites. The projectd configurations are based on the current projections of ADP workload growth.

Question. SPLICE is an interim system until SPAR is implemented. How long will SPLICE be used before SPAR is installed?

Answer. SPLICE will be used for stand-alone minicomputer applications, such as the procurement function, and, more significantly, for telecommunications, throughout the life of the contract which expires in 1998. This employment of SPLICE is designed to dovetail with and provide capabilities which complement the Burroughs CPU upgrade and the SPAR system. With the planned delivery of SPAR telecommunications in the 1996 to 1998 timeframe in phase II of that project, SPLICE equipment will have reached the end of its economic life and will be retired from service at stock points and inventory control points.

Question. What assurance does the Navy have that the SPAR contractor selected will use the SPLICE systems installed to ensure that the Navy obtains full economic use of them?

Answer. The Navy plans to use SPLICE equipment for its supply system telecommunications. As specified in the SPAR solicitation, that choice belongs to the Navy, not to the SPAR contractor.

Question. What is the Navy plan for transitioning software to SPLICE, and later to SPAR?

Answer. Two standard minicomputer applications have been transitioned from antiquated Perkin-Elmer systems to SPLICE. The procurement function is a new system which uses SPLICE as its vehicle. These three systems have been included in SPLICE because SPLICE provides a common system that affords linear expandability to match increasing workload and, hence, an economy of scale for systems which otherwise would be less cost-effectively operated on separate machines. Several functions including transaction ledger, material receiving, and inventory accuracy management are written for SPLICE in order to optimize the balance with the Burroughs processors, further benefit from economies of scale, and accelerate the realization of effectiveness and efficiency improvements that devolve from the total modernization efforts.

As discussed before, there will be no rehosting of applications from SPLICE to SPAR because SPAR will provide, through its modernization, a complete restructuring of the operation at a Navy stock point. Through the process of information engineering and data base design, which have proven invaluable in the private sector in developing effective and more efficient systems, SPAR will provide a complete substitute for the current stock point system. Further, the modernized system is being designed in consonance with continuing efficiency reviews and will be a part of a new operational concept for the Navy stock point for the year 2000 and beyond. The aim is to build a system which sustains improved supply system effectiveness while it increases system efficiency as reflected in reduced inventory investment, increased inventory accuracy, and leaner staffing levels throughout the supply system. SPAR will provide a better means to address the potentially harmful deficiencies in the security and integrity of the supply system which are attacked today by the extensive and expensive use of human intervention. Finally, the modernized SPAR system will be designed with flexibility to address strategic homeport changes and mobilization requirements as well as with the capacity to accommodate surges in the event of sudden war.

Question. Does the Navy plan to develop some SPLICE applications, such as disbursing/accounting/civilian payroll, use them for a short time, and then just throw them away?

Answer. One of the systems being transitioned from the Perkin-Elmer is the disbursing and accounting function which is planned to be replaced by the Navy's standard disbursing and accounting system in 1992 and will not be a part of SPAR. The procurement function will remain on SPLICE throughout SPLICE's life cycle until 1998. Those functions written for SPLICE to optimize the workload balance with the Burroughs system will be performed on SPLICE for three to eight years depending on the function and the site. Finally, payroll is not one of the functions on SPLICE. The

Navy is developing a standard civilian payroll system through a separate program.

Question. At $256 million, or the higher contract value, why is SPLICE economical over its potentially short life?

Answer. The life cycle of SPLICE is fifteen years. This is the longest single-phased acquisition in DOD. The cost is being held down by restricting the use of SPLICE to applications where the performance, flexibility, or cost payoffs warrant.

Question. What is the breakeven point for SPLICE use established by the Navy in its economic analysis for the system?

Answer. The automated capabilities provided by SPLICE are integral, and therefore necessary, to the performance of the Navy's supply mission. Because this automation is essential, it was inappropriate to compute a break-even point. Rather, the Navy sought to find the least cost approach to providing the SPLICE capabilities. The minimum cost alternative reflected in the SPLICE Milestone III economic analysis is the approach taken in the SPLICE acquisition and development.

Question. What SPLICE cost was used in the economic analysis?

Answer. The life-cycle cost in that economic analysis is equivalently $171 million in constant fiscal year 1984 dollars or $256 million in then-year dollars.

Question. How often will the Navy update SPLICE cost-benefit analysis, and how soon could one be made available to the Committee?

Answer. Consistent with OSD policy, an economic analysis was included in the milestone III decision paper. An updated cost-benefit analysis for SPLICE is planned for inclusion in Milestone IV documentation which will be submitted within two years of the Milestone III approval which was Sep 85. A copy of the analysis will be provided, if desired, within thirty days of the Milestone IV document's approval.

Question. Why did the contractor for the ICP Resolicitation program decide to use its own telecommunications equipment rather than SPLICE?

Answer. The contractor for ICP Resolicitation does not decide whether or not to use SPLICE. SPLICE will be used for all nonsecure ICP remote network requirements. There are a limited number of interim situations where network support must be provided to remote system users prior to SPLICE availability. These few users will be converted to SPLICE as soon as the SPLICE deployment schedule permits.

Question. Why in the SPAR solicitation is the Navy allowing contractors to propose using their own telecommunications rather than using the relatively new SPLICE equipment?

Answer. SPAR will fully utilize SPLICE as an integral part of its communication solution throughout the SPLICE competitive life. SPLICE is a keystone in the new integrated communications environment supporting Navy inventory control points, stock points and other customers worldwide. The only exception is that, of necessity, Navy has required SPAR contractors to propose an alternate communication solution for those smaller activities, such as Level II Air Stations, that are not scheduled to receive SPLICE equipment.

NAVAL AIR LOGISTICS COMMAND MANAGEMENT INFORMATION SYSTEM

Question. Since 1972, the Navy has been developing the Naval Air Logistics Command Management Information System (NALCOMIS) at a cost of over $103 million to date. Life cycle costs are estimated to be $568 million, and the current budget requests FY 1987 funds of $43.6 million. Program savings are expected to be between $1 and $2 billion.

In the Committee's 1986 report, the Comptroller was directed to conduct a formal MAISRC Milestone II review of NALCOMIS before major new NALCOMIS software investments are made. Mr. Springett, when will you comply with the Committee's instructions on NALCOMIS?

Answer. DoD will conduct MAISRC review of NALCOMIS during the summer 1986 timeframe. Upon completion of the MAISRC review, the House Appropriations Committee will be informed of the MAISRC findings, results, and plans as they relate to the NALCOMIS program.

Question. How much has been spent on NALCOMIS redesign since the Committee's 1986 report was published?

Answer. Since the Committee's 1986 report was published, $1,969,108 has been obligated for NALCOMIS Phase III Organizational Maintenance Activity (OMA).

Question. When will the MAISRC review the NALCOMIS redesign?

Answer. DoD plans to conduct a MAISRC review of NALCOMIS during the summer of 1986.

Question. In what stage will the NALCOMIS redesign be when the MAISRC review is conducted?

Answer. NALCOMIS Phases II and III software is being developed and is on target for delivery in the summer of 1986.

Question. Is this early enough to review the adequacy of the Navy's system design determinations?

Answer. We believe that a summer review is adequate.

Question. Will DoD's review be conducted and will a determination of design adequacy be made before the Navy begins to install the new software?

Answer. A determination of design adequacy will be made by the Navy prior to a Milestone III decision.

Question. Should not the installation decision be contingent on the Navy's demonstration of successful development?

Answer. Yes, the Navy's installation decision will be contingent on the successful demonstration of the development.

Question. Mr. Springett, what steps are you taking to control this matter?

Answer. OSD does not plan to take over control of the NALCOMIS because the Navy appears to have established the necessary management controls for program development.

Question. The Assistant Secretary of the Navy for Financial Management was directed to report to the Committee by December 31, 1985 on the amount of funding allocated by the Navy to NALCOMIS. When will it be submitted?

Answer. Report is being staffed within the Navy and will be submitted by mid-May.

Question. Summarize the results of the sizing study and compare the hardware requirements shown by this study with the results demonstrated by the NALCOMIS redesign contractor.

Answer. It is unclear to what "sizing study" the question is alluding. The redesign contract was structured so that its first phase was to perform a preliminary functional and technical design and conduct a sizing study based upon this design against the government's hardware, functional, and performance specification. Full scale development was an option item on the contract to be awarded only if government reviewers were satisfied with the results of the preliminary design and sizing study. This sizing study, which included physical benchmark tests and analytical modeling, was reviewed by the two Navy central design agencies, the Navy Management Systems Support Office and the Navy Fleet Material Support Office, and by the Federal Computer Performance Evaluation and Simulation Center. These agencies concurred that the full scale development could be executed in accordance with contract specifications with minimal risk. The government then awarded the first contract option, to peform the Phase II full scale development based on the preliminary functional and technical design.

Question. Were all functions planned for the Phase II effort (IMA/SSC) included in the redesign?

Answer. Yes, all functions planned for Phase II Intermediate Maintenance Activity/Supply Support Center (IMA/SSC) effort are included in the redesign.

Question. How did the redesign contractor meet the goal of designing a Phase II system that meets the sizing goals established in the Navy's sizing study?

Answer. The redesign contract was structured so that its first phase was to perform a preliminary functional and technical design and conduct a sizing study based upon this design against the government's hardware, functional, and performance specifications. Full scale development was an option item on the contract to be awarded only if government reviewers were satisfied with the results of the preliminary design and sizing study. This sizing study, which included physical benchmark tests and analytical modeling, was reviewed by the two Navy central design agencies, the Navy Management Systems Support Office and the Navy Fleet Material Support Office, and by the Federal Computer Performance Evaluation and Simulation Center. These agencies concurred that the full scale development could be executed in accordance with contract specifications with minimal risk. The government then awarded the first contract option, to perform the Phase II full scale development based on the preliminary functional and technical design.

Question. Why has the Navy added disk drives to its hardware configuration used to benchmark the new design?

Answer. Disk drive requirements have not been increased.

Question. Why has the Navy added storage memory to its hardware configuration used to benchmark the new design?

Answer. The Navy has added internal storage memory to provide growth potential for future developments. The redesign contract specifications restrict the new design to less than sixty percent of available memory to preclude saturation of the machine in the initial release.

Question. Why did the Navy find it necessary to increase the capability of its host processor?

Answer. The DPS6/76 to DPS6/94 upgrade was a preplanned product improvement available on the SNAP I contract implemented to standardize ship and shore configurations.

Question. Why did the Navy find it necessary to shift data base files from the host processor to the front end processors?

The FEDSIM study indicates this was necessary because the host processor was not capable of containing the entire data base needed for the redesigned system.

Answer. Data base files have not been shifted from the host processor to the front end processors. The host processor contains the data base and functions. However, to optimize system architecture, the functions of validation, entry level security and communications control have been shifted to the front end processors. The only data resident in front end processors support security and validation, and total less than one megabyte or less than one third of one percent of the host data base.

Question. Why didn't the sizing study, done in preparation for the redisign effort, identify this problem?

Answer. The sizing study was based on the correct distribution of data base files between host and front end processors. There has been no redistribution of these files.

Question. In June, 1984 Navy traded off a hardware upgrade to meet system performance requirements in favor of a software solution, but has recently upgraded NALCOMIS processors to run the software solution. Provide the total program cost increases for the hardware upgrades and the software solution separately.

Answer. The Marine Aircraft Group-FOURTEEN (MAG-14) prototype experience in 1983 produced two significant findings. First, the NALCOMIS functional software design is fundamentally sound and provides significant, quantifiable benefits to the Navy. Second, the NALCOMIS Standard Environment (NSE), could not support the performance level required to implement NALCOMIS in the Fleet. These NSE performance shortfalls could not be rectified within the maximum hardware expansion (value of $38,000,000) available from the Shipboard Non-Tactical ADP (SNAP I) contract. The viable alternative was functional software design based on efficient utilization of the system software environment supplied by the hardware manufacturer. This is referred to as the "Native Mode" environment to distinguish it from the third party vendor developed NSE environment. The reference to hardware upgrade cost is assumed to be the cost associated with the pre-planned field installation of 90 series processors in the shipboard and Marine Corps systems. This action will establish an across-the-board baseline host processors for full NALCOMIS sites and completes an upgrade option negotiated in the basic SNAP I contract (awarded 1 June 1982). Total hardware cost is $2,142,040 in 1986 dollars. Total software development cost, including the first year of life cycle maintenance, is projected as $12,000,000.

Question. What is the extent of hardware upgrading for the initial NALCOMIS hardware suite set up at the prototype site in

July, 1983 compared to the hardware being purchased to run the software redesign effort now being done for the Phase II effort (IMA/SSC) and that planned for Phase III (OMA)? Identify the configuration, e.g. processor, memory, disk requirements and corresponding costs for each separate type of installation.

Answer. The MAG-14 "C" host processor has been scheduled for baseline upgrade as part of the overall processor baseline schedule (cost $71,140). Additional costs at MAG-14 are for additional terminals and screen dump printer (cost $64,351), and direct connect printers in IMA work spaces (cost $30,751). Mass storage (cost $91,000) currently required by NSE software, and excess to Phase II software, will be removed. There is no equipment difference identified or planned for Phase III.

Question. The Navy has upgraded NALCOMIS hardware several times. The latest is the replacement of DPS 6/74 processors with DPS 6/94 units for aircraft carriers and Marine activities. How has the additional cost for hardware been analyzed for cost benefit purposes?

Answer. All NALCOMIS equipment planned and installed to date is within the basic SNAP I contract. The cost of this equipment was included in the NALCOMIS Automated Data System (ADS) Plan, and the System Decision Paper (SDP) documentation of June 1984.

Question. With the hardware upgrade costs now incurred or planned to be incurred, does the software solution previously selected remain the cost effective solution?

Answer. The software solution remains the cost effective solution.

Question. How has this been determined?

Answer. The software solution selected is operationally viable and, as a minimum, $36,000,000 cheaper in hardware costs. The NSE software development was terminated, due to cost and schedule overrun and poor performance. Cost for completion of this software was estimated at $10,000,000 to $12,000,000 at development cancellation. Development of NALCOMIS software in Native Mode has added no software development cost to the program.

Question. Is not the Navy, in effect, adding both the hardware upgrade and the software solution to its program?

Answer. The upgrade of the NALCOMIS deployable systems to a common baseline was an action initiated independent of software redesign specified in the common baseline for the redesign contractor. The redesigned software has been developed to perform on the Navy baseline hardware.

Question. Two prior NALCOMIS designs resulted in only partial development of the complete system intended to be deployed. Was the current redesign in accordance with all required specifications?

Answer. Yes, the current redesign is in accordance with all the required specifications.

Question. Does it comply with all requirements of the NALCOMIS functional descriptions?

Answer. Yes, the current redesign is in accordance with all required specifications.

Question. How was this demonstrated and determined?

Answer. A series of design reviews have been and continue to be conducted by the government in accordance with MIL-STD 1521A.

Question. Has the ASN(FM) reviewed the design developed by the software redesign contractor as indicated in last year's testimony?

Answer. Yes, he has reviewed and approved the redesign and a report was submitted with the FY 1986 Presidential Budget Request.

Question. Is the ASN(FM) in agreement with the Project Office's decision to provide more capable processors to accommodate the design, and revise the design to accommodate data base sizing problems?

Answer. "More capable processors" addressed are the preplanned product improvements within the approved SNAP I contract, which was approved by the Assistant Secretary of the Navy (Financial Management) ASN(FM).

Question. Will the Navy know with certainty that its Phase III development will be a good design and will fit on the hardware available at the NRMM sites?

Answer. The Navy will know with certainty that its Phase III design is a good one prior to undertaking its full scale development. Phase III is software for aircraft squadrons while NRMM (and Phase II) supports intermediate maintenance activities and supply support centers (IMA/SSC). Since squadron operations are independent of IMA/SSC operations, Phase III is not intended to operate on either Phase I (NRMM) or Phase II hardware.

Question. The redesign effort was to have a single data base for each phase of the two-phased redesign effort: one combined Phase II data base and a separate Phase III data base. Why does the redesign now include these two separate data bases as well as two additional data bases for the IMA/SSC?

Answer. Phase II and Phase III each have only one data base. The "two additional data bases" is apparently an allusion to the front end processors which do not have data bases.

Question. Does this mean that the redesign contractor was unable to satisfy the design specification restrictions or meet the hardware design constraints? Please demonstrate in terms of the present design/hardware as compared with the software redesign contract requirements.

Answer. The redesign contractor was able to satisfy the design specifications.

Question. What cost does this add in hardware and in software?

Answer. No costs were added in hardware or software for the redesign contractor was able to satisfy the design specifications.

Question. Does the front end processing system at the IMA or SSC now require a larger processor?

Answer. While still under assessment, the redesign contractor advises that the front end processor should be a DPS6/74 vice a DPS6/54 because of Central Processing Unit (CPU) speed requirements in performing screen processing, validation, and communications. As previously addressed, data base processing is performed by the host and not the front end processor. A front end processor is functionally generic and not constrained to the IMA or SSC function. There is one IMA/SSC host and two or three IMA/SSC front ends. Any terminal can perform any function through any front end.

Question. Are separate data base management systems required for these systems due to the change in system design?

Answer. No, there was no change in system design.

Question. Concerning the NALCOMIS Repairables Management Module (NRMM): Is the Navy monitoring the performance of its installed NRMM systems?

Answer. The Central Design Agency (NAVMASSO) monitors the performance of installed NRMM systems through the respective Type Commander of each site. The Type Commander coordinates with the CDA for resolution of trouble reports.

Question. What is the reporting mechanism?

Answer. The reporting mechanism for NRMM installed sites is to the Central Design Agency (CDA) via the Type Commander in the form of trouble reports and change proposals.

Question. What technical capabilities have been achieved, in areas such as response time and throughput capability?

Answer. Response times and throughput capability for NRMM are adequate. When users have experienced excessive response times, the CDA has updated/modified application software to user satisfaction or modified system software configuration (memory pools, etc.) to accommodate improved technical functionality.

Question. Are they adequate?

Answer. Yes. All technical performance thresholds have been met and exceeded.

Question. Have users reported any functional or operational shortfalls?

Answer. NALCOMIS Repairables Management Module (NRMM) shortfalls have been generally deferred to NALCOMIS Phase II. The most cognizant shortfall in NRMM is the duplicative effort in Maintenance Data System (MDS) which requires the retention of the paper Maintenance Action Form (MAFs) as well as terminal entry of MAFs into NRMM.

Question. How did the appropriate Navy organization respond?

Answer. The CDA accommodates the users in the best manner with regard to life cycle maintenance and cost benefit analysis.

Question. Were users satisfied with the changes made?

Answer. Users have been satisfied with the CDA response with changes made in NRMM and change proposals reserved for Phase II.

Question. Have there been any changes to installed NRMM systems to make them operate better or to become more functionally or operationally adequate?

Answer. NRMM system software has been modified to create additional memory pools to improve functionality. Additionally, automated repairable inventory balances have provided the fleet with tools to improve inventory and financial accounting accuracy.

Question. Are different results being achieved at the different using activities, such as aircraft carriers, Marine aircraft groups, Naval air stations, etc. of different size?

Answer. The initial results thus far have been universally excellent at all sites. Varying degrees of results exist at the different using activities for a myriad of reasons. New program acceptance, communication disparity among user sites, size of activity, geographical layout of large user sites, and operating environment have been primary factors in the results achieved.

Question. What have been the quantifiable benefits to system users in terms of reduced personnel costs, improved readiness, improved aircraft maintenance management, etc?

Answer. NRMM has been implemented for such a short duration at too few sites to realistically identify quantifiable benefits in terms of improved readiness and reduced personnel costs. User activities have experienced personnel shifts from within functional areas. NRMM provides previously unavailable repairable management tools to better schedule personnel resources to satisfy immediate work requirements.

Question. Are these savings greater than NRMM costs?

Answer. NALCOMIS Phase I (NRMM) has not been implemented long enough to make such a determination.

Question. Provide a summary of the testing that the redesign contractor has conducted and the results of that testing. Also provide the results of Navy testing and the problems it disclosed.

Answer. The redesign contractor is performing unit and systems testing. The Navy Management Systems Support Office (NAVMASSO) is conducting unit, systems and technical compatibility testing in Norfolk, VA as well as operational test and evaluation (OT&E) at MAG-14, MCAS Cherry Point, NC. The OT&E will be "evaluated" by an independent quality team in accordance with applicable directives. Contractor unit and systems testing to date shows high quality and compliance with functional specifications. NAVMASSO has just begun testing and has not yet reported results.

Question. Is development and testing on schedule?

Answer. Yes, the development and testing are on schedule.

Question. Is sufficient time provided to run a complete prototype test?

Answer. Yes. Operational test and evaluation for Phase II will run for sixty days.

Question. How much time is allowed for this?

Answer. The prototype testing period will span ninety days for Phase II, including sixty days for Operational test and evaluation.

Question. Why does the Navy consider this an adequate test period?

Answer. Phase II software is replacing NALCOMIS Standard Environment (NSE) software. The majority of the functionality of Phase II has been operating at MAG-14 in the NSE since 1984; the users are trained and the automated information system operation has long since stabilized.

Question Does the current schedule allow sufficient time to evaluate prototype test results and to prepare and analyze the test report before requiring further decisions?

Answer. Yes, the current schedule allows sufficient time. Sixty days after completion of the actual operational test and evaluation period for Phase II are allowed for the preparation and analysis of the test report.

Question. How much time is allowed for this, and why does the Navy consider this to be adequate?

Answer. Sixty days are sufficient for completion of the evaluation and the system decision paper. The requisite system decision paperwork is currently under development and will be complete to the point of inclusion of prototype results prior to the completion of the actual prototype evaluation.

Question. When will the Navy know it has a successful Phase II software package that can be retrofitted at NRMM sites?

Answer. The Navy will know at completion of the SDP.

Question. Why does the Navy believe this is an adequate lead time for making its Phase II procurement decisions?

Answer. There are minimal differences between the hardware requirements for Phase I (NRMM) and Phase II, these differences being in the area of peripherals and having little impact on site preparation plans or procurement. All required peripherals are available on the SNAP I contract.

Question. What is the Navy schedule for completion of prototype testing and for the Navy's in-house Milestone III review?

Answer. Phase II—Operational Test and Evaluation, August and September 1986; system decision evaluation and paperwork preparation, October and November 1986; submission of paperwork through Milestone III chain-of-command, November and December 1986. Phase III follows Phase II, event-for-event, by three months.

Question. Why does the Navy believe it can meet such a difficult schedule with the NALCOMIS redesign?

Answer. From contract award to the present, the redesign and development has proceeded on schedule for a start of prototype in July 1986.

Question. How will Navy management be convinced that the current effort will not experience problems that would require time to correct before system deployment?

Answer. Operational test and evaluation at Marine Aircraft Group-FOURTEEN will provide the necessary data for a "go" or "delay" decision.

Question. How would the Navy propose to use FY 1987 NALCOMIS procurement funds if the tight schedule slips?

Answer. Navy would execute procurement action in second quarter FY 1987 vice first quarter FY 1987.

Question. Mr. Springett, can you assure the Committee that the Phase II development, test and evaluation plan and schedule are achievable within the constraints and assumptions the Navy has established?

Answer. The department has not reviewed Phases II and III of the NALCOMIS program. However, this type assessment is an integral part of the MAISRC process.

Question. How much is requested in FY 1987 for deployment of Phase III systems?

Answer. $1,386,000 is budgeted for implementation of NALCOMIS phase III in FY 1987.

Question. Does the Navy expect the Phase III redesigned software to be ready and to have been successful in prototype testing without even having completed the design?

Answer. The NALCOMIS OMA functional design has been operating continuously since August 1983 at MAG-14, Marine Corps Air Station (MCAS) Cherry Point and therefore, the Navy is confident of successful prototype testing. However, the Navy will conduct complete prototype testing of NALCOMIS Phase III.

Question. What assurance can you give the Committee, Mr. Springett, that the Phase III deployment funds, if appropriated, can be used as planned?

Answer. Development of NALCOMIS Phase III is on schedule. The Milestone II process is proceeding with prototype testing scheduled for November 1986. Milestone III approval is targeted for the second quarter FY 1987. The Navy is confident that Phase III deployment funds can be executed as planned in FY 1987.

BASES AND STATIONS INFORMATION SYSTEM (BASIS)

Question. The Bases and Stations Information System (BASIS) is proposed to provide base level automation at 108 Navy installations worldwide. The Navy estimates the life cycle cost to be at least $193 million. The Air Force program to do a similar function, known as Phase IV, has an estimated life cycle cost of $5 billion for 115 Air Force installations. The Navy's cost estimate, by comparison, does not seem credible.

Mr. Springett, do you consider BASIS to be a major automated information system?

Answer. No, the current Navy estimate for the BASIS program is $109.1 million, of that $22 million is for operating costs which are not part of the costs used to determine the major AIS threshold.

Question. Has there yet been a MAISRC review?

Answer. No, on the basis of current Navy plans, BASIS does not meet the threshold for identification as a major automated information system.

Question. Is one planned?

Answer. No, as things stand BASIS will be managed by the Navy.

Question. What reviews will be performed at milestone 0, 1, 2, and 3 to ensure the program remains on schedule and within budgeted cost?

Answer. The Navy will make the milestone reviews in accordance with Navy regulations implementing the DoD life cycle management policy.

Question. Mr. Springett, how do you explain the vast difference in life cycle costs between the Navy and Air Force systems?

Answer. The scope of the BASIS and Phase IV programs are very different. Programs which support automation of Navy and Air Force base level functions are structured differently.

The Air Force system is organized around a concept of a single "service center" at each base. The Phase IV program provides new hardware for all of these base level facilities. Navy programs have been organzied more along functional lines. There is no single program which provides data processing capabilities to the full range of base level functions.

The BASIS program is not intended to provide such a capability. BASIS will provide a mechanism for linking other existing base level systems, and providing decision support to the installation commander. Some new applications which do not currently exist are included in BASIS, however, one would have to add all Navy base level data processing capabilities together to obtain some rough comparability with the Phase IV program.

Question. Does OSD endorse the Navy life cycle estimate?

Answer. Based on the cost information provided by the Navy we do not expect the BASIS life cycle costs to be in any way comparable to those of the Phase IV program. However, we have conducted no formal review of the Navy's BASIS estimate.

Question. Why does BASIS not appear as a line item in the Navy budget?

Answer. Bases and Stations Information System (BASIS) does not meet the Office of the Secretary of Defense (OSD) criteria of a major automated information system which costs $25 million per year or $100 million through implementation. Therefore, it does not show up as a separate line item. The $193 million BASIS life cycle cost cited as the Navy estimate in the introductory comments is not correct. This amount is the implementation and operations cost of the system contained in a draft System Decision Paper One as of 10 September 1985, but is not the life cycle costs of the project as fully approved in Milestone One. As the project went through Navy review, it became clear that BASIS, as constructed was made up of two separate efforts—support of landlord functions at selected bases and stations and provision of local area networks or other local communications to support all automated information systems at the installation level. The latter, since its scope is much wider than BASIS, will be dealt with as a separate project. The life cycle cost of the BASIS project without considering a pro rata share of the LAN, as approved, is $109.1 million. Of that figure, $22 million are operating costs which are not part of the costs used to determine major AIS thresholds under DoD Instruction 7920.1. LAN costs, and their allocation to the various programs supported, have not been determined.

Question. How can either OSD or Congress fulfill their oversight responsibility when a program of this magnitude is hidden?

Answer. We do not believe that the BASIS program is or was hidden. Current Navy planning defines a BASIS that does not meet the OSD threshold for identification as a major automated information system.

Question. The committee understands that BASIS development costs have been prorated among eight Navy "sponsors." How has OSD ascertained whether each sponsor fully programs and funds its share of BASIS costs?

Answer. The eight resource sponsors are requested to program other procurement, Navy (OPN) and operations and maintenance, Navy (O&M,N) funds to meet the cost of their hardware configurations and associated operating costs through annual program objectives memorandum (POM) issue papers. These baseline assessments direct the resource sponsors to program the OPN dollars to the compter acquisition program (CAP) line items, since beginning in fiscal year (FY) 1987 BASIS will be a centrally managed program. This provides the management framework through which the program manager can track programmed dollars from the POM through the budget process and into execution. Additionally, O&M,N dollars to support the operating costs will be programmed to a central claimancy to assist in tracking these funds. The levels of programmed funding for BASIS are documented annually in the post-sponsor program proposal (SPP) assessment. The post-SPP assessment is a summarization of the funding programmed by each sponsor in response to the BASIS POM assessment papers. The levels of programmed funding are monitored closely. If there is a deviation from the required funding, this is brought to the attention of the resource sponsors immediately. The total cost for the development and maintenance of the application software to run on the BASIS hardware configurations is being provided by one resource sponsor, Chief of Naval Operations (CNO (OP-094)).

Question. Why would OSD not simply require the Navy to fully fund the program rather than implement it piecemeal?

Answer. BASIS must be evaluated against all other projects in Navy, automatic data processing (ADP) and non-ADP. If OSD directs that a specific project be funded, that may force the Navy to divert dollars from another project which the Navy, OSD, and indeed the President and the Congress, consider a higher priority. OSD, therefore, tries to respect the funding decisions of the military departments with regard to allocation of dollars to meet their internal requirements except in very unusual cases. Where BASIS-specifically is concerned, the development costs are fully funded by the program sponsor, and the costs to be funded by the resource sponsors are to pay for implementation at specific bases under their purview. BASIS can, therefore, be implemented without immediate full funding by all resource sponsors with the remaining bases to be added as resource sponsors are able to fund them.

Question. Who are the eight sponsors?

Answer. The eight resource sponsors are the headquarters level funding sources for the Navy major claimants such as the fleet commanders who are actually charged with management oversight of the 108 BASIS activities. BASIS has CNO (OP-094) as its single "program sponsor." The eight resource sponsors assessed to provide funding for BASIS are:

CNO (OP-01).
CNO (OP-02).
CNO (OP-03).
CNO (OP-04).
CNO (OP-05).
CNO (OP-093).
CNO (OP-094).
CNO (OP-09B).

Question. How much funding has each sponsor committed to BASIS development through FY 85?

Answer. CNO (OP-094) funded BASIS development through fiscal year 1985. In FY 84, $1.1 million was provided and $2.2 million was provided for BASIS development in FY 85. Funding from other sponsors was not required before FY 86.

Question. How much is budgeted in FY 86 by appropriation? In 1987?

Answer. The following funds were appropriated in FY 86:

$801,000 in OPN for the BASIS prototypes.

$208,000 in O&M,N for the prototypes.

$1.8 million for software development and program management.

In FY 87, the following funds were budgeted by appropriation:

$2.8 million in OPN for BASIS implementation.

$2.2 million for program development.

Question. What has been the cost and schedule impact so far due to the BASIS requirement?

Answer. There has been no cost or schedule impact thus far because the BASIS implementation sponsors do not fund development costs and the initial implementation year is FY 87. The program is designed to be software, vice hardware oriented, and implementation delay will have minimal impact on program development costs. This is because the hardware acquisition strategy is to purchase from Navy indefinite quantity contracts existing when implementation occurs.

Question. Why would the Navy not adopt a central management philosophy for this program as was done in the Air Force?

Answer. Through FY 86 only development, which is fully funded by one resource sponsor, will occur. During implementation, there is greater diversity of program funding from eight resource sponsors. The complexity of multiple funds tracking requires centralized coordination, and BASIS will be a centrally managed program commencing in the first implemention year, FY 87.

Question. Has the Navy included local area network costs in the BASIS total life cycle costs?

Answer. Prior to Navy approval, the BASIS plan was to include local area networks in the BASIS program and their costs in total life cycle costs. The program sponsor decided to separate these costs and make local area networks a separate funding issue to prevent one system from bearing the burden of shore base and station local area network costs. If this were to occur, the benefits of BASIS could be delayed at many sites due to resource sponsor inability to fund the significant additional costs of the local area network with the BASIS system. A number of systems planned for base and station installations have requirements for a local area network. Local area network installations and costs must be centrally funded, controlled and managed as a distinct project separate from the AIS which will use them to avoid duplication of effort by those systems in the data communications area.

Question. Are local area networks part of BASIS?

Answer. Local area networks will not be installed with BASIS if they are not already present at a BASIS site, but BASIS will use a local area network whenever one is in place at a base or station. Until a local area network is installed, BASIS will use a telephone modem system for interim data communications with terminals in offices not resident in the same building with the processing unit serving the information to users. For those offices in the same building or area, a direct connection can be used.

Question. Would BASIS work without them?

Answer. While a local area network or direct connection may provide a faster response time than the interim solution of telephone modems, the use of modems should not degrade system user effectiveness below the acceptable level. This question will be explored during the prototyping to be held as the final phase of requirements definition and can be better answered when user evaluations are provided. One prototype site will use a local area network, while two others will use a combination of telephone modems and direct connections.

Question. How will the Navy ensure that BASIS local area networks will be available when needed?

Answer. Local area networks will be provided by resource sponsors of bases and stations to their activities on a schedule determined by the resource sponsors' assessments of the relative priority of that requirement with other needs. The consolidation of voice and data communications and/or the installation schedule of AIS requiring local area network support at each base or station are important factors in this decision.

Question. Mr. Springett, do you plan to allow the Navy to fragment the cost of BASIS, as was done for UADPS and SPLICE?

Answer. The BASIS costs are fragmented only to the extent that development is being funded by the parent resource sponsor and implementation is funded on a pro rata schedule by resource sponsors in support of their activities. Pro rata funding is common and often the most successful technique for fielding systems which encompass multiple Navy activities. It does not impair good management of the BASIS project. Nor does the separation of the local area network project from BASIS represent fragmentation of project costs. It represents the only coherent, cost-effective method of providing local facility data communications support. If every AIS implemented at an installation included its own local area network, Navy would find that the same streets were being dug up multiple times to install local area networks of different types with different protocols which could not communicate and exchange data and which would cost much more than a single well-planned project.

Question. Why would OSD not require two programs that are similar, such as Navy BASIS and Air Force Phase IV, be treated identifically?

Answer. We do not believe that BASIS and Phase IV are similar, nevertheless both are being managed under the DOD life cycle management policy.

Question. Does OSD have a policy with regard to the sharing of AIS lessons-learned between the Services?

Answer. On March 25, 1986 the Comptroller signed DOD Instruction 7930.1, "Information Technology Users Group Program." The policy states that, "Information Technology Users Groups shall be established to facilitate the exchange of information and problem solutions among users with common interest and experience in using information systems". Formal user groups are being established to help in identifying and resolving problems in system use and operation.

Additionally, as part of our ADP acquisition improvement program, the Comptroller emphasized in a recent memorandum the importance of strengthening the education and experience of our ADP program managers and established an ongoing program managers' forum. The purpose of this forum is "to provide program managers a cross-Service, informal environment in which to share positive experiences, as well as failures, in ADP acquisitions."

The Navy hosted the forum's kickoff session in early March 1986, where more than 30 senior DOD ADP program managers attended. The forum plans to meet again in a few months.

Question. What kind of formal working group between Air Force Phase IV and Navy BASIS program management offices exist?

Answer. While Navy discussed the Air Force efforts at the working level earlier in the development phase, there is presently no formal working group between Air Force Phase IV and Navy BASIS. The scope of the Phase IV project goes far beyond the provision of support to landlord functions performed at Navy bases and station, which limits the direct application of Phase IV capabilities to BASIS. Navy plans to stay in touch with the Air Force, however, to benefit where possible from Phase IV lessons learned.

Question. If none, why is this acceptable to you, Mr. Springett?

Answer. We do not view BASIS and Phase IV to be similar systems. Therefore, a formal working group is not needed.

Question. The Air Force has had the National Academy of Science perform two reviews of the Air Force Phase IV system. What is the possibility of having the Navy tap this expertise prior to incurring large expenditures on its BASIS program?

Answer. As stated earier, Navy will stay in touch with Air Force and will make optimum use of Phase IV lessons learned. Navy will particularly factor this information into the prototype evaluation which will occur prior to BASIS implementation.

Question. Does the Navy plan to use a fourth generation language in BASIS?

Answer. Navy will use two fourth generation languages in BASIS. The first competitively obtained language will be used only for development software used in the three prototypes. Navy is currently preparing solicitation documents supporting an indefinite quantity or "umbrella" contract for a fourth generation language for Navy-wide use. This contract should be competitively awarded in mid-FY 87 and will be used by BASIS to obtain the fourth generation language for any development of in-house production software to be implemented at 108 BASIS sites.

Question. What formal capacity estimation will be perfomed, how will it be accomplished, and by whom?

Answer. BASIS capacity estimation will be determined for computer memory and disk storage requirements. The estimation will be accomplished by prototyping the BASIS application software at a small and large activity (base or station). As part of BASIS prototype testing, storage sufficiency relative to computer memory and disk capacity will be evaluated for the small and large activity. The capacity estimation will be performed by the Prototype Testing Team composed of BASIS application software developers, users and quality assurance personnel. It will be based on prototype results and projections from developers of application software.

Question. What is the Navy's plan for BASIS technical assistance and independent verification and validation contractor support?

Answer. Contractors are providing BASIS technical assistance and support in two areas: refining the initial economic analysis from the BASIS System Decision Paper One and an independent vendor alternative evaluation. The economic analysis support consists of the contractor's capturing additional data for the economic analysis to be included in System Decision Paper Two. The vendor alternative evaluation is a contractual task to perform a nationwide study to determine commercially available off-the-shelf software and appropriate hardware that meet BASIS needs.

Independent verification and validation will not be accomplished by contracting but by a government organization independent of BASIS application software developers acting as a third party auditor and tester. The third party, probably a Navy Regional Data Automation Center not involved in BASIS development, will perform configuration audits, conduct system performance testing, and prepare audit and test reports. These actions are provided for in SECNAV Instruction 5232.1, the Navy quality assurance directive.

SHIPYARD/ORDNANCE ECLECTIC SYSTEM (SHORES)

Question. Describe the Shipyard/Ordnance Eclectic System and show how this differs from BASIS.

Answer. The intent of the Shipyard/Ordnance Eclectic System (SHORES) is to acquire modern computer resources at Naval Sea Systems Command (NAVSEA) field activities to replace obsolete and outmoded equipment currently in place. It is directed specifically toward providing automated support for the industrial mission of large NAVSEA activities such as shipyards and ordnance stations.

BASIS will provide AIS to bases and stations by providing hardware and software systems to assist them in managing 16 identified "landlord" functions. BASIS will provide accurate and timely information to various levels of naval station management. It will promote efficiency by optimizing productivity and being consistent with the mission of the naval base or station to support operating forces.

Question. Could they be combined?

Answer. SHORES has no defined software requirements at this time. If, when they are defined, any overlap in functions surface, we will resolve them to prevent duplicate efforts.

Question. Why are there separate SHORES lines in the 43B?

Answer. The funding requirements were shown under the systems/programs which would procure off the SHORES contract if it became available. The two systems which planned to take advantage of that contractual vehicle are the Shipyard Modernization and Ordnance Modernization Programs and that is where the funding is shown.

Question. Is there any funding in any appropriation or fund for development of SHORES?

Answer. There are no development costs for SHORES.

Question. If so, how much?

Answer. There are no development costs for SHORES.

Question. Mr. Springett, the Navy tells us the life cycle for SHORES is between $48 million and $1.2 billion. Given such a wide variance, how confident are you that the Navy has a coherent plan and strategy for SHORES?

Answer. The wide variance in life cycle cost represented minimum and maximum potential usage of the SHORES contract. The

SHORES contract was only in the initial planning stages and those amounts were only preliminary planning figures.

Question. Provide the SHORES funding requirement and programmed resources through FY 91 by appropriation and fund. Relate this to the Exhibit 43B SHORES line items in the current budget.

Answer. SHORES was planned as a contractual vehicle which shipyard and ordnance activities could choose to use to satisfy requirements to augment currently installed equipment. If SHORES is available, it will be the contractual vehicle used. If SHORES is not available, other contracts shall be employed.

STANDARD AUTOMATED FINANCIAL SYSTEM (STAFS)

Question. The Standard Automated Financial System will provide a complete and modern financial system to 14 Navy R&D labs, at an estimated life cycle cost of $135 million according to last year's testimony.

What is your current estimate of STAFS life cycle costs?

Answer. The current estimated life cycle cost of STAFS is $134.8 million.

Question. How does this compare to the original cost estimate made in 1982? What is the reason for the dramatic cost growth?

Answer. The estimated life cycle cost in 1982 was $113.7 million as shown in General Accounting Office report GAO/IMTEC-85-2 dated 30 Oct 84. Of the total $21.1 million total project increase since 1982, $16.9 million was for software costs, $2.9 million for hardware costs, and $1.3 million for central design costs. The primary reasons for the growth were that the Navy and the contractor did not fully understand the complexity of the system and the initial functional description lacked detail which necessitated additional requirements to be added to the system design.

Question. Why were the milestone completion dates for STAFS renegotiated with the contractor in 1984?

Answer. As a result of a system walk-through in Jan 84, it became apparent that the functional specifications did not contain sufficient detail to accomplish system development. Therefore, a revised program plan was prepared. Following extensive discussions, the Navy and the contractor reached an agreement regarding the full scope of work required to make STAFS a successful system. This resulted in a renegotiation of the estimated contract cost and schedule to complete STAFS.

Question. How does current contract performance compare to the schedule?

Answer. Current contract performance is on schedule. Navy acceptance of the system is expected by Oct 86.

Question. How does this affect implementation at user facilities?

Answer. Implementation is scheduled at the first site in Dec 86. This provides a period of 2 months after system acceptance to complete preparations for first site implementation. Because of the complexity and scope of the system, this 2-month period is required for quality assurance and preparation for implementation at the first site.

Question. What is the reason for and the cost impact of the delay in software testing?

Answer. There has been no delay in the software testing for STAFS. Some internal software testing milestones for the project have been altered but the overall project milestones remain unchanged.

Question. What is the projected date for progressing into the software evaluation phase?

Answer. The Navy acceptance process of the total system will begin in Jul 86 and is scheduled to end with acceptance of the system by Oct 86.

Question. Congress appropriated $14.9 million for STAFS in FY 86, yet the current Navy budget forecasts expenditures of $18.4 million. In FY 87, $15.8 million is requested compared to the $4.2 million forecast a year ago. Please compare the current budget to last year's budget by fiscal year and appropriation; explain in detail the cost growth.

Answer. The dollar amounts stated in the question are not in agreement with our records. The amount in the Fiscal Year (FY) 86 column of the FY 86 budget was $15.8 million and is budgeted principally from the Navy Industrial Fund (NIF) Asset Capitalization Program. This is comparable to the $18.4 million figure in the FY 86 column of the FY 87 budget.

The increases to the FY 86 estimates were in fact a shift of costs from FY 85. Hardware and related off-the-shelf software procurements were deferred for about one-third of the sites from procurement in FY 85 to FY 86. This resulted in a $3.7 million increase in FY 86. The milestones renegotiated with the development contractor stretched out the program and resulted in a decrease in FY 85 development costs and related Automatic Data Processing (ADP) Studies and Maintenance costs. The net of these changes was a budgeted increase for FY 86 of $2.6 million ($18.4 million–$15.8 million).

The correct total figure for the FY 87 column of the FY 86 budget was $4.7 million instead of $4.2 million stated in the question. This is comparable to the $15.8 million figure in the FY 87 column of the FY 87 budget.

FY 87 costs increased as a direct result of the stretching out of the program. This included a deferral of the planned reduction in staffing in the project office, $2.3 million, and some system development costs deferred from prior years, $1.7 million. An outright increase of $7.1 million in development and maintenance costs was also incurred. However, the total life cycle costs remain within the $134.8 million plan.

Question. What would be the impact of holding FY 87 STAFS funding to the level forecast a year ago?

Answer. A cut back of funding for STAFS to the previous level for FY 87 would result in the system not being implemented beyond the first site and the system in use at that site would not meet current accounting and reporting requirements because development and quality assurance would be incomplete.

Question. Has STAFS ever been reviewed by the MAISRC?

Answer. No, STAFS has not been reviewed by the MAISRC.

Question. Is a MAISRC review planned?

Answer. A MAISRC review of STAFS is not planned.

Question. Mr. Springett, does the dramatic cost growth in the STAFS program require the delegation of oversight authority to be revoked under your new criteria?

Answer. Under our new criteria, program cost growth of 25% or more for the overall program is a criteria that can lead to the revocation of a component, in this case, Navy, oversight authority. We will be working with Navy to determine if any breach has been made.

Question. Provide a cost track in the format of page 25 of STAFS SDP II.

Answer. Figures in millions.

Current Contract Authority:	
Original Contractual Authority (Dec 82)	$65.0
Equipment Upgrades (Jul 84)	2.8
Additional Authority Provided with System Decision Paper II	14.7
Total	82.5
Current Contract Obligations:	
Total Prime Contract	50.0
Total IV & V Contract	9.4
Total	59.9
Current Contract Expenditures (Mar 30):	
Total Prime Contract	42.2
Total IV & V Contract	8.7
Total	50.9

ARMY FORCES COMMAND INTERIM AUTOMATION

Question. The Committee's investigative staff reports that the Army recently purchased large mainframe processors for 21 FORSCOM installations.

Question. How did FORSCOM acquire the IBM 4331 processors for its 21 installations?

What was the acquisition cost?

What is the estimated life cycle cost?

Question. Was a DPA from GSA obtained to acquire this equipment?

Were there any conditions or restrictions in the DPA?

If there was no DPA, what authority allowed this procurement?

Question. Was the acquisition of the IBM 4331 processors a competitive procurement?

Provide for the record a list of vendors which participated in the competition.

Question. Were IBM 4331 processors for the FORSCOM installations acquired by means of 21 separate procurement actions?

Who authorized this method of procurement?

Question. Did the FORSCOM automation management officer provide FORSCOM installations with a standard procurement request and/or justification language for use in connection with the acquisition of the 21 IBM 4331 processors?

Who approved the orders for the 21 installations?

Question. Did the FORSCOM automation management officer receive any assistance from vendor representatives in developing the standard procurement request and/or justification language for the procurement of the 21 processors?

If so, why?

Question. In obtaining the IBM 4331 processors in the manner it chose, did FORSCOM thereby avoid the process of developing an Agency Procurement Request, avoid obtaining a DPA from GSA, avoid competition, split purchase orders, and basically sole source this equipment?

Was the Assistant Secretary of the Army for Financial Management, the Army's senior ADP official, aware of or part of this acquisition strategy? Was the Defense Comptroller?

Question. Have any additional upgrades been obtained to the processors for the 21 FORSCOM installations?

Identify the specific upgrades, cost, and method of procurement for the record.

Question. Were the procurement actions to obtain this equipment based on a critical need and/or a time sensitive requirement?

If so, what were the conditions and do they still exist?

What made the procurement time sensitive?

Army answer. During FY 81 through FY 83, prior to the installation of VIABLE resouces, FORSCOM acquired IBM 4300 series processors to meet the projected mobilization operational requirements at individual installations. Acquisition costs for the 21 installations were $1.19M lease and $.38M purchase. When it was determined by FORSCOM, as a result of mobilization exercises, that installations could not process their required workload with the existing, old, outmoded and saturated processors, the command began efforts to correct the problem. The mission shortfall was so severe that installations could not delay replacement of their processing capabilities until the fielding of VIABLE. The requirements were approved as an interim to VIABLE so that no life cycle cost estimates were made, however, all other administrative and approval requirements of Army regulations were complied with.

It was the FORSCOM policy to centralize the acquisition of IMA resources during this timeframe. Each installation was and is responsible for the resources necessary to support its mission and funding and acquisition of these processors was accomplished based upon the installation's priorities. Since acquisitions were based on installation commanders' decisions concering reprogramming dollars, this established the acquisition strategy. Procurements were accomplished based on each installation's ability to fund the action. Initial lease costs ranged from $40,000 to $100,000 per year, depending on the installation's operational needs.

Although this shortfall was contained in an information briefing for the incoming ASA(IL&FM), Mr. Bonner, and contained preliminary cost justification for upgrades or replacements of installation processors, funds had not been programmed or requested, the acquisition strategy was not yet developed and program approval was not requested.

The requirements for installation processors were administratively approved based on AR 18-1. Three installations were able to satisfy their requirements through the reutilization program. For the remaining installations, if the cost of the acquisition was within the MACOM approval authority it was approved by FORSCOM. All but one of the acquisitions was within the FORSCOM authority, and this was approved by HQDA. FORSCOM approved each installation's requirement on the basis of a competitive acquisition.

Each installation developed the justification and procurement request independently of the FORSCOM AMO although there may have been sharing of "lessons learned" among installations. The FORSCOM AMO did not provide or develop a standard procurement request with or without vendor assistance. CBD notices were published and competitive acquisitions conducted in accordance with applicable acquisition regulations. A specific DPA would be required only if the cost of an individual, interim acquisition was above the threshold established by GSA in the acquisition regulations, therefore no DPAs were requested and no conditions or restrictions placed upon the acquisitions. Vendors responding to the CBD notices included IBM, SPECTRUM, STC, Fed Data, SMS, EDS, WANG, Burroughs, NCR, Memorex and Diamond Page. The range of respondents to the CBD notices varied by installation.

It is FORSCOM's intent to provide interactive on-line processing capability in support of installation management. VIABLE was acquired to process the STAMMIS workload at installations. Utilizing the resources acquired to support mobilization prior to VIABLE as FORSCOM's installation management support is good business and in keeping with the Army's three tiered architecture concept. The basic issue is the response or on-line time availability of the system.

Installation users require an interactive, on-line capability that provides timely response to permit effective utilization of personnel, equipment, material and facilities. VIABLE procedures do not provide on-line production which is essential for mobilization executions. Based upon the need for on-line processing capability, these processors have been retained and some upgrades have been accomplished to meet the unique requirements of each installation.

Details of the upgrades are:

Installation	Date	Cost	Method
Drum	9/85	$163,513	Purchase
Meade	1/86	140,700	Lease
McCoy	11/85	137,573	Purchase
McPherson	4/85	13,368	Lease
Campbell	1/86	67,680	Lease
Stewart Processor 1	9/85	93,586	Purchase
Stewart Processor 2	9/85	81,607	Purchase
FIG	12/85	45,000	Lease
Polk Processor 1	9/85	164,090	Purchase
Polk Processor 2	11/85	192,600	Purchase
Sheridan	9/85	162,145	Purchase
Lewis	4/85	30,000	Purchase
Sam Houston	11/85	187,089	Purchase
Richardson	9/85	120,000	Lease
Carson	11/85	100,262	Purchase
Ord	9/85	101,000	Purchase

Question. Does the continued existence of the interim processing capability at the 21 FORSCOM installations mean that VIABLE is unable to deliver sufficient processing capability to perform FORSCOM installation processing?

Answer. No. VIABLE processes STAMMIS workload for all FORSCOM installations which are primarily batch cycle processing and do not provide sufficient on-line or interactive processing. Installation users require an interactive capability that provides timely response to permit effective utilization of personnel, equipment, materiel, and facilities. Utilization of resources acquired interim to VIABLE provides the interactive capability at the installations.

Question. Mr. Springett, have any of the IBM processors located at the FORSCOM installations been purchased under the lease buy-out program?

Answer. Lease/Purchase Analyses (LPA) have been prepared on all leased ADPE in FORSCOM and acquisitions have been accomplished based on the LPAs.

Question. If so, provide details of the purchase.

Answer. The following FORSCOM installations purchased the leased processors:

Installation	Date	Amount
Drum	6/85	$97,000
Devens	12/84	29,925
McCoy	12/84	51,562
Campbell	10/85	15,223
Stewart Processor 1	12/84	10,156
Stewart Processor 2	12/84	44,651
Hood	8/81	175,480
FIG	12/84	54,546
Polk Processor 1	12/84	3,170
Polk Processor 2	12/84	3,412
Sheridan	12/84	38,003
Lewis	2/85	43,655
Riley	12/84	36,163
Sam Houston	12/84	128,006
PSF Processor 1	12/84	38,000
PSF Processor 2	12/84	52,000
Irwin Processor 1	1/85	24,82
Irwin Processor 2	4/85	146,491
Richardson	12/85	62,835
Carson	12/84	7,076
Ord Processor 1	1/85	47,800
Ord Processor 2	9/85	19,200

Question. Did Training and Doctrine Command (TRADOC) installations, the United States Military Academy, and Health Services Command also upgrade their computer capabilities by acquiring IBM 4331 processors?

Answer. TRADOC installations did acquire IBM 43xx series processors. Health Services Command had an emergency replacement of one processor, the USMA did not acquire a processor.

Question. If so, were individual procurement orders processed for each TRADOC installation? For the Academy? For Health Services Command?

Answer. Individual acquisitions were conducted for 16 TRADOC installations. Two installations acquired two processors individually, four installations used the reutilization program for a total of 14 individual procurement orders. One acquisition was conducted by Health Services Command, to replace a damaged processor.

Question. Have any of the IBM 4331 processors as initially procured for TRADOC installations, the Academy, and Health Services Command been upgraded?

Answer. Only TRADOC has upgraded their installation processors.

Question. If so, identify the specific upgrades, cost, and method of procurement?

Answer. Nine TRADOC installations have upgraded their processors:

Installation	Date	Cost	Method of acquisition
Fort Bliss	May 85	$107,000	Purchased
Fort Dix	Jan 85	$6,000	DOD Excess List
Fort Benj Harrison	Jun 85	$38,700	Purchased
Fort Knox	Dec 84	$195,000	Purchased
Fort Leavenworth	Apr 84	$560 per mo	Leased
Fort Monroe	Jul 85	$223,000	Purchased
Fort Rucker	Jul 83	$500 per mo	Leased
Fort Sill	Jan 85	$146,600	Purchased
Fort Leonard Wood	Sep 84	$15,000	Purchased

Question. Have any of these TRADOC, USMA, and/or Health Services Command processors now been purchased under the lease-buyout program?

Answer. There are 12 TRADOC installations which have purchased their processors, one installation will purchase the processor under the Federal Lease to Ownership Program (FLTOP).

Question. If so, provide details of the purchase.

Answer. The details are:

Installation and date:	Cost Thousands
Ft Bliss, May 85	$23.0
Ft Gordon, October 84	27.0
Ft Benj Harrison, December 84	8.7
Ft Knox, December 84	38.9
Ft Leavenworth, FLTOP	
Ft Lee, May 85	7.3
Ft McClellan, April 84	20.6
Ft Monroe, June 83	116.0
Ft Monroe, April 85	140.0
Ft Rucker, September 84	32.0
Ft Rucker, February 85	57.0
Ft Sill, January 85	16.1
Ft Leonard Wood, December 83	172.9

Question. Show by appropriation and fiscal year the funds in fiscal years 1985 to 1987 to purchase, lease, or upgrade IBM 4331 processors separately for FORSCOM, TRADOC, the Academy, and Health Services Command. Be specific in order to facilitate GAO review.

Answer. FY 85-87 dollar amounts, by appropriation, for the purchase, lease and buyout of IMB 4331s are as follows:

	FY85	FY86	FY87
FORSCOM:			
OMA	$185,582	$630,696	$342,256
OPA	2,078,884	0	0
OMAR	50,568	0	0
TRADOC:			
OMA	192,824	81,744	81,744
OPA	1,344,908	138,769	[illegible],008,300

USMA: Not applicable. VIABLE used for installation support.
HSC: Not applicable. VIABLE used for installation support.

PROJECT 80-X

Question. Project 80X will modernize computers at a number of Army personnel centers. Life cycle costs are estimated at over $300 million. Initial procurement funds are proposed in FY 1987. Describe the vendor disputes that the Army is currently engaged in over Project 80-X.

Army Answer. Project 80X is a competitive acquisition of a state-of-the-art replacement for leased hardware in compliance with GSA direction. A Project 80X Request for Proposals (RFP) was issued to vendors in May 1985, and a proposal was received in 25 Feb 86. On that same day, Sperry Corporation protested the acquisition with the GSA, alleging that the solicitation required a degree of technical interactivity between processing sites (called "Interoperability") which favored IBM-based solutions, and was therefore competition limiting. On 3 March Sperry withdrew its protest, without prejudice, to permit the Army to review its requirements and resolve other technical internal issues.

The program was reviewed by OSD staff, and agreement reached on resolution of technical issues. As of 6 Jun 86, the Army has resolved the technical issues associated with the acquisition. The Army prepared an amendment to the RFP which will ensure that the acquisition remains fully competitive. The amendment was released 13 Jun 86. Proposals are due 11 Aug 86, and contract award is anticipated for 3 Mar 87. For the record, program milestones are as follows:

Date	Event
August 1983	MENS and PM Charter (acquisition approval).
March 1984	Functional Description (FD); ASA(FM) Approval.
May 1985	RFP initial release.
February 25, 1986	Proposals received; Sperry protest filed.
June 13, 1986	Amended RFP released (resolves Protest).
	Overview of Future Milestones
August 11, 1986	Receipt of Proposals from vendors.

Date	Event
August-December 1986	Evaluation of Proposals.
January 1987	Contract negotiations.
January 16, 1987	"Best and Final Offers" phase.
March 3, 1987	ASA (FM) Decision: Award of Contract.
March-December 1987	Testing and Acceptance; Transition.

Question. When will a MAISRC be conducted on this system?

Answer. OSD conducted a staff level review of Project 80X in May 1986. One of the conclusions reached is that Project 80X should continue to be directly managed by the Army, and will not require an OSD MAISRC review at this time.

Question. What changes are now likely in the Army's acquisition strategy as a result of OSD involvement?

Answer. As result of the OSD review, the Army agreed to modify its acquisition strategy, by removing competition limiting specifications from the solicitation document. An amendment to the solicitation document, containing the points of agreements between Army and OSD, was released in June 1986.

COMMODITY COMMAND STANDARD SYSTEM (CCSS)

Question. The Commodity Command Standard System is a backbone Army logistics system whose life cycle cost is estimated to be $765 million.

The Army's budget documentation, specifically exhibit 42C, states that under CCSS "acquisition of large-scale computers to replace the currently-installed equipment is being pursued." How much is budgeted in each fiscal year 1985 to 1991 by appropriation for the CCSS upgrade?

Answer. The CCSS-upgrade is a hardware upgrade (not replacement). The current budget figures are:

[In millions of dollars]

	FY85	FY86	FY87	FY88	FY89	FY90	FY91
Hardware:							
Reprogramming pending		18.7					
Army Industrial Fund		4.7					
Productivity Industrial Fund			9.6				
Procurement Appropriation				9.4	14.1		

Note. There are six computer sites scheduled to receive a total of eleven large-scale computers for CCSS

Question. Please explain the acroynms (AIF/PIF/PA).

Answer. AIR (Army Industrial Fund) is a working capital fund—no profit/no loss basis. PIF (Productivity Investment Fund) is a funding program to finance high payback initiatives. PA (Procurement Appropriation) is OPA3 funds.

Question. Has any OSD level review, such as MAISRC or CRC, been accomplished on the proposed update?

Answer. A MAISRC has not yet been conducted; however, one is expected in the near future.

Question. Will the CCSS modernization follow DOD policies and directives, specifically life cycle management?

Answer. The CCSS large-scale computer acquisition will follow DOD life cycle management policies and directives.

Question. Does a Mission Element Needs Statement exist today? Is one planned?

Answer. The MENS for the large-scale computer system is being forwarded to OSD in connection with the forthcoming MAISRC.

Question. When will System Decision Papers be prepared? When are they scheduled for approval? Who will approve them?

Answer. Within a month after the MENS approval, expected in third quarter FY 86, the System Decision Papers will be prepared for HQDA approval. They will then be reviewed by the OSD MAISRC for approval.

Question. A recent draft GAO audit (Army Materiel Command Needs to Follow Procedures: Code 510011) is extremely critical of the Army's ADP management of CCSS. Specifically, the Army has consistently failed to follow Army ADP directives, perform economic analyses, track project costs, and review completed projects. The Congress is thus placed in the position of approving CCSS projects regardless of whether they are economical, worth the cost, or are the most cost-effective alternatives available. What is the Department's response to the findings of the GAO draft audit?

Answer. The GAO draft audit was provided to the Army Materiel Command in February 1986 for review and comment. While many of the isues raised by GAO were valid, these instances also provided the Army the impetus to make improvements. The Army Materiel Command is developing a project management system for internal management which is currently in the process of being modified to include all costs associated with a system. Data elements are being identified to provide that capability. The Army Materiel Command also is prototyping a method which models the functions in an organization. It identifies high payoff areas and reflects where improvements will occur. Use of the model has potential for giving better data for current costs and verifying those costs after implementation. The GAO was provided with detailed comments which would be reflected in the final version of their report. In particular, the Army pointed out that economic benefits play a key role in the decision to invest in automated systems, and that appropriate departmental directives have generally been followed. The cases in which the GAO found that economic analysis were not performed were either explained or rebutted. Finally, the MAISRC will assess the progress in correcting these problems during its review and will provide guidance on further improvements if needed.

Question. What procedural changes will be made?

Answer. The Logistics Systems Review Committee maintains close control over the development of all Automated Data Processing (ADP) systems. However, following a meeting with GAO on January 8, 1985, the Committee recognized that some shortfall had occurred in the review of benefits achieved. Subsequently, the committee directed that for all ADP systems with projected benefits, data will be collected on actual benefits, reported in writing to the Committee and actual savings reflected in budget submissions. These management controls (Project Management System and

Labor Management System) are under development and should be in place by the end of FY86.

Question. How will they affect the CCSS modernization program?

Answer. The Army has taken steps to strengthen its cost/benefits tracking system and will continue to enforce the appropriate directives in the CCSS-MOD program as well as all others.

Question. Mr. Springett, in light of your displeasure with the management of Army ADP programs and the lack of an Army architecture, coupled with a pending adverse GAO audit, why would you fail to conduct a MAISRC on the CCSS Modernization prior to requesting funds for it from Congress?

Answer. The Assistant Secretary of Defense (Comptroller) has been working in concert with the Assistant Secretary of the Army (Financial Management) to resolve recent concerns about a number of Army plans which have not come to fruition. The Comptroller has requested that the Army undertake the following actions to strengthen its information systems management processes:

1. Establish an accountable executive level management oversight process, patterned after the Major Automated Information System Review Council (MAISRC), as outlined in DoD 7920.2. This process should oversee all major automated information systems, whose review has been delegated to Army by OSD, including those procured under the Warner Amendment.
2. Promptly schedule MAISRC reviews, when such reviews are required. To ensure that these reviews are performed in a timely and efficient manner, it is absolutely essential to share facts and analyses early, at the staff level.
3. Cease application of Army architecture specifications to ongoing procurements until the architecture has been analyzed, documented, and briefed to OSD.

In the specific case of the Commodity Command Standard System (CCSS), the funds which the Army has requested are primarily intended to support ongoing operation of wholesale logistics functions which are essential to the Army mission.

The Army has reported that there are two major changes being made to the CCSS: first, there are 60 new applications to be added to the base of 346 currently being maintained. To provide additional computing power for these needs, acquisition of large scale computers to replace the current equipment is being planned. Second, there is a long range plan being developed to eliminate the division between the National Inventory Control Point systems and the supply depot systems.

The CCSS has now been designated as a system which will receive MAISRC oversight.

Question. Mr. Springett, do you plan to require a fully competitive acquisition for CCSS modernization?

Answer. Yes, a competitive acquisition is planned.

Question. What are the milestones and key decision points for CCSS Modernization?

Answer. Approximate milestones and key decision points for the CCSS large-scale computer upgrade follow:

LCM milestone	Decision date
0	August 86.
I & II	To be determined.
MAISRC	To be determined.

INTEGRATED PROCUREMENT SYSTEM (IPS)

Question. The Army proposes to initiate an automated integrated procurement system for its logistics activities in FY 1987. Life cycle costs of this new start program are unknown. The budget shows funding for this initiative to be $162.8 million through FY 1991.

Question. What is IPS, why is it needed, what is its life cycle cost?

Question. What are the current, detailed milestones for IPS?

Question. Has a MAISRC been conducted on IPS? Is one scheduled any time soon?

Question. Mr. Springett, why have you allowed the Army to request $22.3 million in FY 1987 for IPS prior to conducting an OSD review of it?

Question. In your opinion, is this prudent?

Question. Mr. Springett, do you intend for IPS to be a fully competitive acquisition?

Question. Will IPS follow all DOD policies and procedures, particularly life cycle management?

Question. Does a Mission Element Needs Statement for IPS exist today?

Question. Has an economic analysis been prepared?

Question. Does a systems decision paper exist?

Question. Who will review this system?

Question. Was Phase I fully completed on time by February, 1986?

Question. What is the acquisition strategy and what types of contracts are envisioned?

Question. What action has the Army taken to ensure that IPS interfaces with the other on-going Army logistics modernization programs?

Question. When do you forecast procurement contract award?

Question. Mr. Springett, based on the milestone data provided in the Army's exhibit 43C for IPS, would you appropriate $22.3 million if you were in our place? Why do you allow such inadequate documentation for a major new start initiative?

Answer. IPS represents the full-scale application of the Command Automated System for Procurement (CASPR) concept. CASPR, developed for Army Materiel Command (AMC) by its Communication Electronics Command (CECOM), permits the processing of Procurement Work Directives (PWDs) in an electronic environment. IPS will result in a paperless contracting processing in AMC. The IPS initiative exploits other major automating initiatives in AMC including workplace automation, local area networks and large-scale computers, as well as the existing Commodity Command Standard System (CCSS) and other ADP systems at the AMC Major Subordinate Commands (MSCs).

IPS is an essential element in the AMC drive to improve workforce productivity, administrative lead time and significantly improve the timeliness and quality of procurement and logistics management data. The life cycle costs previously provided to the committee of $162.8 million through 1991 include the costs of hardware that will be used for other applications as well as IPS. An IPS economic analysis is under review by DA for approval. It reflects guidance from DA, Army Audit Agency (AAA), and ASA(FM) in prorating costs to IPS and the other applications. A substantial reduction in total LCC is expected.

The IPS acquisition strategy requires competitive acquisition of both hardware and software development and will follow all DoD policies and procedures, particularly life cycle management.

To insure that IPS interfaces with the other on-going Army logistics modernization programs, the AMC Automated Logistics Management Systems Activity (ALMSA) has been designated the IPS developer. ALMSA will augment their resources with contractor support as required. ALMSA, as the configuration manager for other logistics systems in AMC, is in the best position to insure IPS interfaces with LOG-MOD as well as other systems. The very thrust of IPS is to integrate systems and hardware to achieve major improvements to the acquisition process. We expect an initial support contract for ALMSA to be awarded in the 4th Quarter of FY 1986.

IPS has not been the subject of a MAISRC but will be reviewed as an element of the CCSS MAISRC. A MENS for IPS is under review by DA, and approval is expected in July 1986.

The Army requested $22.3 million in FY 1987 under IPS for workplace automation terminals, microcomputers, peripherals and software for the MSCs. CASPR provided the basis for IPS. IPS documentation coupled with existing CASPR documentation provided sufficient evidence to warrant this new start. Even if we do not develop IPS, these tools are essential for near-term productivity improvements at AMC. If we forego laying the foundation for automating functions, which is what the $22.3 million is for, then we forego any chance of mitigating the manpower and budget constraints at AMC. Delays could result in postponement of major improvements in the execution of our programs and, in turn, support to our forces. Life cycle management milestones follow:

LCM milestone	Decision date
0 (Needs Approval)	July 86.
I (Concept Approval)	August 86.
II (Design Approval)	January 87.
III (Development Approval)	September 87.

Question. Mr. Springett, why do you treat Army logistics ADP programs as stand-alone efforts but Air Force logistics ADP programs as an integrated system?

Answer. The management priniciples of DoD Directive 7920.1 "Life Cycle Management of Automated Information Systems" allow DoD Components and agencies the flexibility to implement ADP program initiatives in a manner that best suits its management structure and mission needs. Consequently, stand-alone efforts are acceptable providing the integration and interface requirements have been appropriately identified.

Question. What appropriation(s) contain the $22.3M in FY 87 for IPS.

Answer. The O&MA appropriation.

STANDARD DEPOT SYSTEM (SDS)

Question. The Standard Depot System is a backbone Army logistics system whose life cycle cost is estimated to be $545 million.

The Army's budget documentation, specifically exhibit 43C, states that "It is planned to completely modernize the system."

How much is budgeted in each fiscal year 1985 to 1991 by appropriation for the SDS upgrade?

Answer. The following was submitted as a PDIP for SDS-MOD as part of the PAR/POM process. SDS-MOD is unfunded at this time. Personnel within the SDS-MOD Project Management organization are on loan from other directorates at this time.

[In thousands of dollars]

Requirements	1985	1986	1987	1988	1989	1990	1991-95
Operating cost:							
OPA	0	0	0	0	0	0	[1] 0
AIF/ACP	0	0	0	952	952	952	0
OMA	0	0	0	1,693	1,693	1,694	0
Investment cost:							
OPA	0	0	0	9,073	358	0	0
AIF/ACP	0	0	8,828	727	727	728	3,640
OMA	0	0	0	7,459	4,420	0	0
Total operating cost: $7,936,000.							
Total investment cost: $35,960,000.							
Total project cost: $43,896,000.							

[1] An assessment of operating cost beyond 1991 is pending completion of the economic analysis in December 1986.

Question. Has any OSD level review, such as MAISRC or CRC, been accomplished on the proposed update?

Answer. No. The cost for SDS-MOD is below the regulatory threshold for MAISRC review.

Question. Will the SDS modernization follow DOD policies and directives, specifically life cycle management?

Answer. Yes, it will.

Question. Does a Mission Element Needs Statement exist today? Is one planned?

Answer. Yes, it was approved by the Acting Assistant Secretary of the Army (Financial Management) on 17 September 1985.

Question. When will System Decision Papers be prepared? When are they scheduled for approval? Who will approve them?

Answer. Preparation/Schedule/Approval follows:

SDP No	Will prepare	Schedule approval	Approval
Milestone 1 and 2	December 1986	April 1987	ASA(FM).
Milestone 3	January 1988	May 1988	ASA(FM).

Question. Mr. Springett, in light of your displeasure with the management of Army ADP programs and the lack of an Army architecture, coupled with a pending adverse GAO audit, why would you fail to conduct a MAISRC on the SDS Modernization prior to requesting funds for it from the Congress?

Answer. The Standard Depot System (SDS) has been added to our list for Component review. We expect the Army to review this system.

Question. Mr. Springett, do you plan to require a fully competitive acquisition for SDS modernization?

Answer. Yes. we do.

Question. What are the milestones and key decision points for SDS Modernization?

Answer. Life cycle management (LCM) milestone/decision points follow:

LCM milestone	Decision date
0	September 1985.
1 and 2	April 1987.
3	May 1988.

Note.—Current milestones envision contract awards in November 87 and February 88.

TEST AND EVALUATION ANALYSIS MANAGEMENT UNIFORMITY PLAN (TEAMUP)

Question. TEAM-UP is the automated system supporting the Army's test and evaluation program whose cost through FY 1981 is $312 million.

The Army's budget documentation, specifically exhibit 43C, states that the budget growth between FY 1986 and FY 1987 is primarily attributable to replacement and upgrade of equipment. Hardware costs in the budget are $97.7 million through FY 1991.

How much is budgeted in each fiscal year 1985 to 1991 by appropriation for the TEAM-UP upgrade?

Answer. Budget follows:

[In thousands of dollars]

Appropriation	Fiscal year—						
	1985	1986	1987	1988	1989	1990	1991
2034 (PAA)	$885	$1,302	$1,977	$1,409	$200	$200	$200
2035 (OPA)	562	1,052	3,240	6,200			
2040 (RDT&E)	17,020	9,570	10,872	15,291	8,677	12,906	10,327

Question. Has any OSD level review, such as MAISRC or CRC, been accomplished on the proposed update?

Answer. The TEAMUP program has been added to the OSD list for MAISRC review.

Question. Will the TEAMUP modernization follow DOD policies and directives, specifically life cycle management?

Answer. Yes, it will.

Question. Does a Mission Element Needs statement exist today? Is one planned?

Answer. Yes, the Mission Element Needs statement has been approved.

Question. When will System Decision Papers be prepared? When are they scheduled for approval? Who will approve them?

Answer. TEAMUP is a plan (not a single system) used by the Army (Test and Evaluation Command (TECOM)), to manage the diverse and geographically disperse installation unique automation efforts associated with the testing of weapons systems at 10 individual installations and activities. These efforts range from the testing of ammunition at Jefferson Proving Ground (Madison, Indiana) to the tracking of missiles real time at White Sands Missile Range (White Sands, New Mexico). Appropriate documentation including Mission Element Needs Statements (plural) are prepared for each system under the TEAMUP umbrella. This documentation is on file at Headquarters, TECOM, the affected installation or activity, and, where appropriate, provided to higher headquarters. TEAMUP is an overall plan used to monitor cost and avoid duplication of effort. No DOD System Decision Papers are required at this time since minimal upgrades to the already operating systems are anticipated. These individual systems do not meet the MAISRC threshold for OSD review, but the overall program will be subject to In-Process Review by the MAISRC.

Question. Mr. Springett, in light of your displeasure with the management of Army ADP programs and the lack of an Army architecture, coupled with a pending adverse GAO audit, why would you fail to conduct a MAISRC on the TEAM-UP upgrade prior to requesting funds for it from Congress?

Answer. The TEAM-UP program has been added to our list for MAISRC review.

Question. Mr. Springett, do you plan to require a fully competitive acquisition for the TEAM-UP upgrade?

Answer. Yes.

Question. What are the milestones and key decision points for TEAM-UP upgrade?

Answer. No DOD milestones or key decision points are submitted since minimal upgrades to the already operating systems are anticipated. However, a MAISRC In-Process Review will be scheduled during the coming year.

Question. Why does the exhibit 43C claim they are "not applicable"?

Answer. As previously indicated minimal upgrades are anticipated.

VERTICAL FORCE DEVELOPMENT MANAGEMENT INFORMATION SYSTEM (VFDMIS)

Question. The Vertical Force Development Management Information System (VFDMIS) is an Army system planned to provide a secure, on-line interactive information system to support manpower force management and authorization documentation functions. Last year, the Defense Department testified that VFDMIS life cycle costs would be over $1.8 billion.

Question. Mr. Springett, how much has been invested in VFDMIS to date?

How much has the Army obligated on VFDMIS from FY 1981 to FY 1986 from all appropriations?

Question. In October, 1982 was the VFDMIS program management office directed to develop an integrated approach using the Army's VIABLE system?

If so, who provided the direction?

If not, what was the office directed to do?

Question. Did the 1983 VFDMIS acquisition plan as approved by Army headquarters staff require IBM or IBM-compatible hardware and software?

Question. Did the Army request a delegation of procurement authority from GSA prior to releasing the RFP to industry?

On what date was the RFP released?

On what date was the DPA from GSA requested?

Question. Did the Army change its designation of VFDMIS as a mission critical computer resources system under the provision of the Warner Amendment?

Did Army advise the Under Secretary of Defense (R&E)?

Did Army advise the Assistant Secretary of Defense (C3I)?

Did Army advise the Comptroller?

When was GSA advised on the change?

Question. For what reason(s), Mr. Springett, did you cancel the VFDMIS procurement just prior to award?

Question. Was the VFDMIS requirement so flawed that cancellation was the only reasonable course of action?

How did this happen after 10 years of work on this project?

Question. How will the Army now satisfy the VFDMIS requirement?

Question. Mr. Springett, will you require a competitive solution to this requirement?

Answer. Since 1976 to date, the Army has spent $30.7 million on VFDMIS. Army expenditures on VFDMIS between FY81 and FY 86 were:

[In thousands of dollars]

	Fiscal year—					
	1981	1982	1983	1984	1985	1986
OMA	2,686	3,507	3,546	5,748	2,074	1,300

Those funds were expended on a software development effort and on the operations of an office to manage the VFDMIS Program. VFDMIS was originally conceived in mid-July 1976 as a totally standalone system consistent with the then dominant principles of automation systems design. However, by 1982, integration and interactivity had emerged as the dominant principles of systems design, and Army had acquired the VIABLE system to accomplish the bulk of its sustaining base processing. As a result, in October 1982, the VFDMIS PM was directed to define an integrated VFDMIS/VIABLE approach as a development alternative for future consideration. That direction was provided by the VFDMIS General Officer Steering Group in conformance with Department of Army guidance that was directed towards all systems then being developed. Subsequent assessment of that and other alternatives led to a competition limited acquisition plan. The Army initially understood VFDMIS to be covered by the provisions of the Warner Amendment, and the VFDMIS RFP was released to industry in February 1984 on the basis of that understanding. The Army subsequently decided the Warner Amendment was not applicable to VFDMIS, notified OSD(C) and C3I of this decision, and requested a DPA in October 1984. The Army canceled the VFDMIS procurement because Army leadership decided that alternative approaches could do the job better and at lower cost. The VFDMIS procurement was directed toward a bottom-up system, but an update review of the Force Management process showed that a top down approach was essential for insuring that unit authorizations of personnel and equipment were synchronized with long lead procurement of weapons and trained soldiers. The VFDMIS procurement was also based on the concepts of dedicated and large host computer based systems, and it could not be readily restructured to exploit the significant performance and cost advantages which current small computer technology offers. The Army is currently redefining the solution to the VFDMIS requirements, but the specific system approach and acquisition strategy have not yet been determined.

Question. What has the Congress received in return for this investment?

Answer. The major results were some software and data base capabilities.

Question. Was a determination of findings prepared to support the compatibility restriction?

Provide a copy of it for the record.

Answer. A specific determination of findings was not prepared in relation to the limitation of competition.

Question. Mr. Springett, why did OSD allow the request-for-proposals to be sent to industry prior to any review by OSD (either MAISRC or CRC)?

Answer. At the time the RFP was released the VFDMIS program was considered a mission critical system and not under the oversight of the OSD MAISRC.

Question. Is this sequence acceptable to you, Mr. Springett?

Answer. Clearly the Department's procedures call for DPA's prior to RFP release unless a system is Warner exempt.

Question. What specific action was taken on May 3, 1984 memorandum to the Chairman of the MAISRC from the Deputy Under Secretary of Defense (Command and Control, Communications, and Intelligence) that identified VFDMIS as a multi-million dollar acquisition which had not been scheduled for MAISRC review?

Answer. Subsequent to the May 3, 1984 memorandum, a review of the VFDMIS was made and we determined that since the expected costs had grown from $78 million to approximately $300 million, and since VFDMIS had been designated as a mission critical computer system, the Computer Resources Council should review the VFDMIS program. When the Army changed their minds and designated the system for procurement under the Brooks bill, a MAISRC was scheduled.

Question. What action was taken on the September 10, 1984 memorandum from the Assistant Secretary of Defense (C3I) recommending that the Defense Computer Resources Council conduct a review the VFDMIS program?

Answer. The Acting Under Secretary of Defense (Research and Engineering) on October 19, 1984, requested the Assistant Secretary of Defense (Comptroller) call a meeting of the Computer Resources Council to review the VFDMIS program.

Question. What action was taken on the October 19, 1984, memorandum to the Comptroller from the Acting Under Secretary of Defense (Research and Engineering) requesting a Computer Resources Council meeting to review VFDMIS?

Answer. In October 1981, the Army designated VFDMIS as a mission critical computer system and proceeded to acquire the automated resources under the provisions of the Warner Amendment (FY 82 Defense Authorization Act). Subsequent to the October 19, 1984, memorandum from the Acting Under Secretary of Defense (Research and Engineering), the Army reversed its earlier decision to designate VFDMIS as a mission critical system and decided that VFDMIS should be acquired in accordance with P.L. 89-306 (Brooks Act), and managed under the ASD(C) policy for Life Cycle Management of Automated Information Systems (DoDD 7920.1). Consequently, it was determined that it would be appropriate to conduct a MAISRC vs. a Computer Resources Council review of the VFDMIS.

Question. Mr. Springett, do you believe that a stand alone system is not a feasible solution to this requirement?

Answer. A "stand alone" system should not be ruled out until the Army's revised approach is reviewed and the best alternative approach to satisfying the need is selected.

Theater Army Medical Management Information System (TAMMIS)

Question. TAMMIS is an Army medical information system to support the provision of medical care on the battlefield or in the combat theater.

What is the life cycle cost of this system? What will the system do?

Answer. The life cycle costs are $35,584,000 through FY91. TAMMIS will field 1014 systems.

TAMMIS, a microcomputer system, is designed to support TO&E medical units. It is not a hospital information system and it does not directly support clinical functions. It consists of:

Patient Accounting and Reporting (MEDPAR): This module will maintain accurate records of patient visits, admissions, current status (diagnosis/prognosis), and anticipated/actual disposition. This information will support the patient evacuation function, force structuring, and unit relocation decisions, as well as supporting the personnel strength accounting and casualty reporting systems.

Medical Regulating (MEDREG): This module will assist medical planners in determining the most efficient method of obtaining necessary care for critically injured/ill patients and coordinating evacuation. These decisions are based on the type and urgency of care needed, evacuation assets available, operating room backlog, availability of specialty physicians, and special supplies and equipment required.

Medical Logistics (MEDLOG): This module consists of three subsystems—medical supplies, medical maintenance and optical fabrication. The system will assist in the management of the receipt, storage, and issue of Class VIII supplies and the maintenance of medical equipment. The management of Class VIII supplies includes requirements for refrigerated storage and shipment, security of controlled substances and narcotics, stock shelf-life rotation, and management by lot number.

Blood Products Management (MEDBLOOD): This module will manage blood product assets. Due to the extremely short shelf-life (35 days from day drawn to last administered date), blood is managed as a separate critical medical item. It will permit asset visibility and rapid cross-leveling to obtain maximum utilization of available blood.

Command and Control (MEDC2): This subsystem will receive information from the four functional modules and provide to commanders and staff critical information such as hospital admissions, bed status, supply status, evacuation capabililties, patients evacuated, surgical backlog, patients returned to duty, blood supply status, etc. The system will be flexible enough to allow users to retrieve ad hoc reports as needed, instead of relying only on predetermined reports.

Question. What is the funding stream by appropriation in fiscal years 1985 to 1991 that supports the life cycle cost estimate?

Answer. All TAMMIS funding is OMA as specified below:

Funding

Fiscal year:	*Millions*
1985	1.462
1986	3.520
1987	2.529
1988	4.752
1989	6.973
1990	7.924
1991	8.424
Total	35.584

The hardware support for TAMMIS will be provided through the TACCS project.

Question. What is the status of all appropriated TAMMIS funds which have not been obligated, by appropriation and fiscal year? Relate this to the 43B exhibit.

Answer. As of 31 March 86, $3.321M was obligated. The remaining $.308M balance will be obligated prior to 30 September 86 to cover civilian personnel costs for 3d and 4th qtrs and remaining projected requirements for testing system in accordance with Technical Bulletin 18-104, Army Automation Testing of Computer Software Systems.

Exhibit 43B FY86 costs were projected to be $1.4M. Because of system modifications following periodic In-Process Reviews (IPR), executed program dollars for FY86 will be $2.2M. Also, 43B exhibit figures only include procurement, lease, and contract costs, i.e., out-of-house expenses, in accordance with preparation instructions for OMB Circular A-11 exhibits.

Question. How does this system relate to standard DOD automated medical information systems, and specifically to the TRIMIS composite health care system?

Answer. The system is being designed as part of the Army Combat Service Support Computer System (TACCS Project). It uses standard data elements found in DOD Manual 5000.12M, AR 18-12 series, Composite Health Care System Central Data Dictionary and the TRIMIS Data Dictionary.

However, TAMMIS is a microcomputer system for TOE units. It is not a hospital information system, and it does not support clinical functions as does the Composite Health Care System (CHCS). The CHCS is an order entry, results reporting system to which are attached functional modules such as radiology, patient admissions, or pharmacy. It is an information system within a single hospital. TAMMIS is a field system for patient admission, logistics, and blood. These functional modules are not linked within the unit, but stand alone.

Question. Will they interface?

Answer. Yes. Although there is no automated interface, there is the capability to transfer patient data between the systems. By using standard data elements, patient data transmitted from TAMMIS to TRIMIS can be readily used. The communication will be through the standard DDN communications network.

Question. Will TAMMIS have any redundancies with TRIMIS systems either in peacetime or wartime?

Answer. TAMMIS addresses some of the same functions that TRIMIS does. If soldiers are expected to be able to operate TAMMIS during war, they must be trained on the system in peacetime. At locations where both TRIMIS and TAMMIS are implemented, TRIMIS will be the standard system and TAMMIS will be exercised in conjunction with TRIMIS so that the soldiers can maintain their skill.

Question. How was this system coordinated and approved by the Defense Medical Systems Support Center?

Answer. The TAMMIS Project was approved by the Assistant Secretary of the Army (Installations, Logistics, and Financial Management (ASA(IL&FM)) in June 1981. After competitive bidding, a software development contract was awarded to Libra Group, Rockville, Maryland on 8 February 1983. ASA(IL&FM) approved continuation of the project at Milestone I (June 1984) and at Milestone II (September 1985). Currently, the project is in Phase III and due to be completed 31 December 1986. The Defense Medical Systems Support Center (DMSSC) was provided responsibility for medical automated information systems by Department of Defense Directive Number 5136.10, dated 6 February 1986. However, coordination between the DEERS Office, TRIMIS Office, and TRIMIS Army began over 20 months ago. Coordination involved briefings/discussions with these offices regarding the TAMMIS Project, providing TAMMIS functional description, data dictionary, new logical and physical models to TRIMIS Army, and attendance/briefings/discussions at TRISERVICE meetings. A review of the TAMMIS Project by DMSSC took place early May 1986.

Question. What approval from any OSD office has been received in writing to enable development of TAMMIS?

Answer. None. Although the system required a MENS in accordance with AR 18-1, it was not considered a major system as specified by AR 1000.1. As a result, it was determined by DAMO-ROC, 3 June 1981, that it would not require approval by OSD.

Question. How would the Army operate standard peacetime TRIMIS systems and TAMMIS in peacetime in the same locations?

Answer. TAMMIS was designed to support wartime operations in medical field-type Table of Organization and Equipment (TO&E) units. Some modules have been developed which allow the system to have limited operational capability in peacetime, but provide a user with the ability to make a very rapid transition to wartime. TAMMIS will be fielded to authorized TO&E units. The peacetime role for TAMMIS is to provide training for operators and for possible deployment to support contingency operations. Those TO&E units which are currently forward deployed (i.e. 7th MEDCOM, U.S. Army Europe) and operating Table of Distribution Allowance (TDA) units would be expected to demonstrate a proficiency annually in the use of TAMMIS.

Question. For example, which system would the Army use for patient administration?

Answer. Since the functional modules in TAMMIS address some of the same functions that TRIMIS does, there would be some overlap. In CONUS the CHCS would be used. Overseas there would be a need to use CHCS with TAMMIS MEDPAR sharing some of the workload. TAMMIS was never intended to replace any peacetime TRIMIS automated functions. By virtue of programing some of these functions (i.e., patient admissions, discharges, record management, patient status, etc.), the system becomes a useful and functional training vehicle.

Question. Is quality of medical care a function supported by TAMMIS?

Answer. TAMMIS does not have a quality of care assessment module, but quality of care in wartime should be improved through better management of tactical medical resources.

Question. Does the Assistant Secretary of Defense for Health Affairs now fully endorse continued funding for TAMMIS?

Answer. The Army has not formally requested coordination or approval of TAMMIS from the Defense Medical Systems Support Center (DMSSC), a field activity of the Office of the Assistant Secretary of Defense for Health Affairs. On 10 March 1986 the Assistant Secretary of Defense for Health Affairs directed that DMSSC conduct a review to determine the proper role of TAMMIS. Specific areas to be reviewed include the capability of TAMMIS to interface with standard DMSSC systems and perform required DOD functions, the ability of TAMMIS to incorporate tactical medical requirements of the other military Services, and redundancies between TAMMIS and DOD standard systems, both in peacetime and wartime operations. This review must be completed before ASD(HA) can fully endorse continued funding for TAMMIS.

ARMY STRATEGY CONFERENCE

Question. During the week of February 3–7, 1986, the U.S. Army Information Systems Engineering Command (USAISEC) sponsored a formal conference at Virginia Beach, Virginia, called Technology Strategies '86.

The Committee's Investigative Staff determined that on the evening of February 5, 1986, a separate, private meeting occurred which was not part of the Technology Strategies '86 conference and which is not listed on the agenda of Technology Strategies '86.

Who called the February 5 evening meeting?

Question. Who decided which Army personnel would attend?

Question. Who invited representatives of Electronic Data Systems (EDS)? Who invited representatives of IBM?

Question. Were representatives of other vendors invited to the February 5 evening meeting? If so, what vendors? If not, why not?

Question. What vendors were invited to the February 5 evening meeting but chose not to attend?

Question. Were EDS and IBM the only vendors at the February 5 evening meeting? If not, what other vendors were present?

Question. Were any vendors consciously excluded from the meeting? If so, which vendors?

Question. Was Apple Computer, Incorporated invited to the meeting? Was AT&T Bell Laboratories invited? Was Boeing Computer Services? Was Sperry Corporation invited?

Question. Was the February 5 evening meeting called at the direction of the Army Assistant Chief of Staff for Information Management (ACSIM)? If not, who did call it? Was the ACSIM aware prior to the meeting that the meeting would occur? If not, when did the ACSIM become aware the meeting had occurred?

Question. Was the Commander of the Information Systems Command (ISC) aware prior to the meeting that the meeting would occur? If not, when did the Commander of ISC become aware the meeting had occurred?

Question. Did the February 5 evening meeting take place without the direction and/or approval of the ACSIM and/or the Commander of ISC? If so, was the Commander of the USAISEC acting on his own initiative when he attended the February 5 evening meeting?

Question. Was the Commander of the USAISEC representing the ACSIM, the Commander of ISC, or acting on his own initiative at the meeting?

Question. Why was the project manager of STARNET there? Why were representatives of ISC and the 7th Signal Command there?

Question. Were any other Army commands and/or activities represented at the meeting? If so, please identify these other Army participants and the reason(s) for their attendance.

Question. Was there an agenda for the February 5 evening meeting? If so, who set the agenda? What topics were on the agenda?

Question. What was the purpose of the evening meeting? What was discussed at this meeting and by whom?

Question. What decisions were made by the Army at the meeting? What decisions were made by EDS at this meeting? What decisions were made by IBM at this meeting?

Question. What decisions have been made by the Army, by EDS, and/or by IBM subsequent to the February 5 evening meeting?

Question. Was an after action report and/or a memorandum for the record written after the evening meeting? If so, who wrote such a document? Who received copies of such a document? Please provide a copy for the record.

Question. Who reported to the ACSIM what took place at the evening meeting?

Question. Who reported to the Commander ISC what took place at the evening meeting?

Question. Was there any discussion at the February 5 evening meeting by anyone about renegotiating the current Vertical Installation Automation Baseline (VIABLE) contract between the Army and EDS? If so, what was the nature of such discussion and who said what?

Question. Was there any discussion at the meeting by anyone about the present capability of VIABLE to assume new requirements and/or about the ability of VIABLE to implement the Army three tier architecture? If so, what was the nature of such discussion and who said what?

Question. Was there any discussion at the meeting by anyone about whether the scope of the current VIABLE contract provides for new requirements to be added to VIABLE? If so, what was the nature of such discussion and who said what?

Answer. The Technology Strategies 1986 conference was sponsored by USAISEC with industry participation to discuss current technological issues. Army personnel have informed OSD that the "private" meeting that occurred was an internal USAISEC meeting conducted by the Commanding General with his staff elements and affected commanders relating to internal engineering workload distribution and mission alignment. No contractor personnel were present according to Army personnel.

Question. Mr. Helm, are you concerned that an evening meeting such as the one held on February 5 at which only selected vendors were present—vendors already participating in a major Army backbone processing program which must be expanded—could create the appearance of impropriety?

Answer. I am not aware of any of the facts of this situation. Yes, I would be concerned that a selected private meeting could give the appearance of impropriety.

CONTINENTAL ARMY MANAGEMENT INFORMATION SYSTEM

Question. In late 1979, a Mission Element Needs Statement (MENS) for the Continental Army Management Information System (CAMIS) was approved. It identifies the overall need for an automated management information system within each Continental U.S. Army (CONUSA) to satisfy information and mission shortfalls and points out that, "The CONUSA organizational structure is unique in comparison to any other organization found in the U.S. Army." The MENS further points out that over 50 percent of the Army total force structure is found within the Reserve Component (RC) and that, "The most serious deficiency in the existing CONUSA system is that it is not oriented towards mobilization and cannot support the mobilization mission."

Mr. Springett, does the Department of Defense still accept the CAMIS MENS as a valid document?

Answer. Yes, we believe that the requirements for CAMIS are still valid, and we support the Reserve Components' needs for automation.

Question. Does the Army still accept that providing an automated management information system to the RC is a valid requirement?

Question. Has the Congress assisted the Army in its efforts to deliver an automated management information system, specifically CAMIS, to the RC? If so, how?

Question. Has the Congress been an impediment to the delivery of CAMIS? If so, how?

Question. Has the Office of the Secretary of Defense (OSD) assisted the Army in its efforts to deliver CAMIS to the RC? If so, how?

Answer. Yes, OSD has assisted the Army in its efforts to deliver CAMIS to the RC.

OSD has assisted the Army by alerting them early to remove risks associated with CAMIS acquisition and development strategy, and remove unjustified limits on competition.

Question. Has OSD been an impediment to the delivery of CAMIS? If so how?

Answer. No, we do not believe that OSD has been an impediment to the delivery of CAMIS.

OSD has not been an impediment to the delivery of CAMIS. OSD has been ready to review the CAMIS program whenever the Army was ready to do so.

Question. Has the OSD Information Resources Management Systems (IRMS) office assisted the Army in its efforts to deliver CAMIS? If so, how?

Answer. Yes. OSD/IRMS has assisted the Army in its efforts to deliver CAMIS to the RC.

IRMS has worked with the Army to strengthen the CAMIS program, and has assisted the Army in its efforts to deliver CAMIS to the RC by giving the Army directions that would result in removing risks associated with Army's acquisition and development strategies, and removing unjustified limits on competition.

Question. Has the OSD/IRMS office been an impediment to the delivery of CAMIS? If so, how?

Answer. No. OSD/IRMS has not been an impediment to the Army's effort to deliver CAMIS to the RC.

Answer. OSD has not hindered Army's efforts to deliver CAMIS to the RC.

Question. Has the RC assisted the Army in its efforts to deliver CAMIS? If so, how?

Question. Has the RC been an impediment to the delivery of CAMIS? If so, how?

Question. Have any organizations outside the Army been an impediment to the Army in its efforts to deliver CAMIS to the RC? If so, identify those organizations and the specific obstacles they placed in the way of delivering CAMIS.

Question. Is the defunct status of CAMIS in April 1986 the result of decisions and actions principally taken by the Army? If not, please explain what non-Army decisions and actions have contributed to the April 1986 status of CAMIS.

Question. What information can the Army provide to explain why in 1986, almost seven years after the CAMIS MENS was approved, the CAMIS RFP has been cancelled and the pressing needs so clearly stated in the MENS remain unfulfilled?

Question. Compare the amounts requested from Congress and in fact appropriated by Congress in each fiscal year 1980 to 1986 for CAMIS to actual expenditures. Show individual appropriations separately and explain the large deviation between the amounts appropriated and ultimately spent by CAMIS.

Question. What has the taxpayer received for the approximately $50 million that the Congress has invested into CAMIS to date?

CAMIS CHARTER

Question. By Disposition Form (DF) dated September 19, 1983, the Product Manager (PM) of the Continental Army Management

Information System (CAMIS) was advised that, "Effective immediately, all internal and/or external actions previously approved and released by the PM, CAMIS will be approved and released by the DCSIRM." [Deputy Chief of Staff for Information Resources Management]. The PM was also advised that, "DCSIRM assumes immediate operational and administrative control of the CAMIS project."

Why was the September 19 DF written, what was its purpose, what was its intent?

Question. Why did the Army direct that all internal and/or external actions previously approved and released by the PM be thereafter approved and released by the U.S. Army Forces Command (FORSCOM) DCSIRM?

Question. Why did the Army direct that the DCSIRM assume immediate operational and administrative control of CAMIS?

Question. Had the performance of the CAMIS PM been unsatisfactory? If so, why was he not removed from his position? If not, why was the DF written?

Question. Does the Army hold the CAMIS PM responsible for any specific problems and/or failures of the CAMIS project between August 1981 and November 1983? If so, what are the specific problems and/or failures?

Question. Between August 1981 and November 1983 were the managerial deficiencies of the PM made known to him in order that he might correct them and in order to protect the project? If so, what deficiencies were made known to him? How were they made known? When were they made known? Did these deficiencies remain uncorrected?

Question. Why could the PM, whose request for an extension of active duty had been effectively denied months earlier, not remain as PM, with full authorities, until completion of his tour of active duty in February 1984?

Question. Was the intent of the September 19 DF to make the position of the PM untenable? If not, was it intended as a vote of confidence? Was it intended to broaden his managerial authorities?

Question. According to an October 4, 1983, memorandum of the CAMIS PM the then FORSCOM Chief of Staff told him that the DF said what he wanted it to say. What did the ACSIM, then the FORSCOM Chief of Staff, want the September 19 DF to say?

Question. Was the intent of the September 19 DF to remove all authorities and responsibilities from the PM while leaving him in place, powerless, slowly twisting in the wind? If not, what was the intent?

Question. Is it the position of the Army that the PM was not fired? If so, what specific management authorities, responsibilities, prerogatives, and controls did the PM retain after September 19, 1983?

Question. The DF states the PM would continue to be rated by the FORSCOM Chief of Staff. After September 19, 1983, and the gutting of the PM's authorities, what was left to rate?

Question. Was the then FORSCOM Chief of Staff directed to write the September 19 DF? If so, by whom?

Question. Does the Army deny that the September 19 DF set aside the CAMIS charter and ignored the fact that the PM worked for the Assistant Secretary of the Army (ASA) for Installations, Logistics and Financial Management (IL&FM)? If so, what is the basis for such denial?

Question. In an October 19, 1983, memorandum by the then FORSCOM Chief of Staff to the CAMIS PM a FORSCOM Comptroller briefing is mentioned in paragraph two as well as a Comptroller proposal, both relating to the organization of DCSIRM. With what situations, problems, or other details did the Comptroller briefing deal? What specifically was the Comptroller proposal mentioned in paragraph two which the CAMIS PM apparently fully supported?

Question. Is it the position of the Army that the September 19, 1983, DF is a result of the Comptroller's proposal concerning the DCSIRM organization? If so, please explain how the DF is a logical implementation of the Comptroller's proposal.

Question. The October 4, 1983, memorandum of the CAMIS PM makes no mention of the Comptroller's proposal but does reference the September 19 DF. Why then does the October 19 memorandum of the then FORSCOM Chief of Staff focus on the Comptroller's proposal when the memorandum of the PM does not mention it but rather focuses on the September 19 DF?

Question. Is the October 19 memorandum of the then FORSCOM Chief of Staff an attempt to use the Comptroller's proposal as a red herring to divert attention from the unsubtle intent and impact of the September 19 DF?

Question. The October 19, 1983, memorandum of the then FORSCOM Chief of Staff to the PM says in paragraph three that, "You have not been stripped of any resources." What does that statement mean? How does the Army define the word "resources" as used in paragraph three?

Question. Paragraph three also states, "The only change affecting you is that you will now report to the DCSIRM rather than the Chief of Staff." Does the Army seriously posit that the only effect of the September 19 DF was to change the reporting channel of the CAMIS PM? If so, what specific managerial authorities did the PM retain after September 19, 1983?

Question. If the September 19 DF only meant that the PM would report to the DCSIRM rather than the FORSCOM Chief of Staff as argued by the ACSIM, then why did the DCSIRM tell investigators of the Army Inspector General that, "* * * he assumed control over CAMIS because his superiors were unhappy with [the PM's] management and because, in a broader sense, his superiors directed him to get FORSCOM's automation management activities under control."?

Question. What information can the Army provide to clarify the obvious discrepancy between the ACSIM's contention that the September 19 DF merely changed the PM's reporting channel and the DCSIRM's contention that he assumed "control" over CAMIS at the direction of his superiors?

Question. If the September 19 DF had only the minimal effect attributed to it by the ACSIM, then why does a March 5, 1985, action memorandum approved on June 17, 1985, by the Army Chief of Staff and sent to the Secretary of the Army state in paragraph 2. c. that, "* * * FORSCOM realigned the CAMIS PM command lines in September 1983, placing the PM under direct management of the * * * (DCSIRM), FORSCOM."? Is the Army Chief of Staff incorrect in his understanding of what happened to the CAMIS PM in September 1983? Was the impact of the September 19 DF understated by the then FORSCOM Chief of Staff in his October 19 memorandum to the PM?

Question. If the September 19 DF had only the minimal effect attributed to it by the ACSIM, then why does the Army Inspector General report on CAMIS dated October 29, 1985, state on page 6, item (8), relative to CAMIS that, "Related documents said the CAMIS PM was put under control of the FORSCOM DCSIRM in September 1983."?

Question. Would it be correct to state that the September 19 DF spawned the 18 month charter conflict over reporting channels between the DCSIRM and the second CAMIS manager and denied the second manager a charter? If not, why is such a view incorrect?

Question. Was one intent of the September 19 DF to create a CAMIS management vacuum and/or obfuscate just where CAMIS management authority resided?

Question. Was one intent of the September 19 DF to introduce a perturbation into CAMIS which would not be resolved until after the CAMIS Source Selection Evaluation Board was suspended?

Question. The second CAMIS manager told investigators of the Army Inspector General inquiring into the charter conflict that he believed he should have been independent from DCSIRM, have a direct channel to Army Headquarters, and not be a Branch Chief in the DCSIRM. Is it correct that the reporting channel and independence demanded by the second CAMIS manager were precisely the same items which were so abruptly taken away from the first CAMIS manager by the September 19 DF?

Question. Is it correct that the 18 month flap over the reporting channel and independence of the second CAMIS manager was brought about solely by the September 19 DF? If not, what was the cause of the charter conflict?

Question. Why was the 18 month charter conflict not resolved expeditiously?

Question. Is it the position of the Army that the September 19 DF and the subsequent exchange of memoranda with the CAMIS PM represent an example of effective Army management of CAMIS? If so, what benefit(s) to CAMIS resulted from the DF and the departure of the PM 71 days later?

Question. Does the September 19 DF support the position that FORSCOM viewed the CAMIS product office as a FORSCOM asset to be operated and administered by its DCSIRM in contraposition to the approved CAMIS charter? If not, why not?

Question. Was the September 19, 1983, DF which effectively finessed the CAMIS PM out of his job able to be written because the ASA (IL&FM), who had chartered the PM, would not object?

Question. Was the September 19 DF able to be written because the Assistant Secretary of the Army for Manpower and Reserve Affairs would not object?

Question. Was the September 19 DF able to be written because the Chief Army Reserve would not object?

Question. Was the September 19 DF able to be written because the CAMIS PM had been abandoned by the offices from which he should have received support?

Question. Was the September 19 DF written to make it easier for the Directorate of Command, Control, Communications, Computers (DAMO C4) at Army Headquarters to usurp the mission of the CAMIS product office and to remove from the scene the PM who questioned the wisdom of such action?

Question. Was the September 19 DF written to euchre the CAMIS PM out of his job and thus remove a prominent advocate of a fully competitive, A109 acquisition approach for CAMIS which at the same time could have capitalized on existing Army assets?

Question. Was the September 19 DF written because the noted ability of the CAMIS PM to obtain funding for his project was no longer needed or desired by the active Army?

Question. Was the September 19 DF written to make the position of the CAMIS PM untenable, encourage him to request termination of his active duty, and when that occurred, to open the doors for a runaway growth of the Demonstration CAMIS Validation System which had been established as disposable prototype and was never intended by the PM to be expanded and infinitum?

Question. Was the September 19 DF written, at least in part, to appease the Rehab Group, Inc. given the fact that the CAMIS PM had long made known his intention not to exercise any more options on the Rehab Group's sole source CAMIS contract?

Question. Was the September 19 DF written, at least in part, because the CAMIS PM had made known his view that the Demonstration CAMIS Validation System was a prototype only, and that Wang Laboratories would no longer be the beneficiary of noncompetitive hardware procurements and/or leases by the CAMIS product office?

[CLERK'S NOTE.—The Army could not or would not provide answers to these questions, which were based on an investigation by the Committee's Surveys and Investigations Staff.]

CAMIS PROGRAM MANAGER

Question. On July 30, 1981, the Assistant Secretary of the Army (ASA) for Installations, Logistics and Financial Management (IL&FM) approved the Product Manager (PM) charter for the Continental Army Management Information System (CAMIS).

What representations were made by the Office of the Chief Army Reserve (OCAR) to the first CAMIS manager prior to August 1981 concerning the probability of an extension of his Mandatory Removal Date (MRD)?

Question. Why was the first CAMIS manager an acceptable choice to take over the project? Did the OCAR support his selection?

Question. Between August 1981 and January 1983, was the performance of the CAMIS manager acceptable to the OCAR? If not, why not?

Question. When did the OCAR become aware that in January 1983 the CAMIS manager had written to the Chief of Staff of the

U.S. Army Forces Command (FORSCOM) requesting an extension of his MRD? How did the OCAR become aware of the request?

Question. In January 1983 did the OCAR support the request of the CAMIS manager for an MRD extension? If so, how and to whom was this support made known?

Question. Was the OCAR ever questioned in January 1983, or later, about whether it supported the request for an MRD extension? If so, who asked OCAR? What was the OCAR's response? When was the OCAR asked its opinion? Did OCAR ever support the MRD extension request in writing?

Question. Is the OCAR aware of what became of the written request for an MRD extension submitted at FORSCOM in January 1983? If so, what happened to it? What action, if any, did OCAR take?

Question. Is the OCAR aware that the request set in the FORSCOM Personnel Office from January 1983 to June 1983 without being acted upon?

Question. In the view of the OCAR, is it commonplace for a personnel action which originates in the office of the Chief of Staff of an Army command to lay dormant for six months?

Question. Is the OCAR aware that the identity of the new CAMIS manager was known in the vendor community in March 1983?

Question. Is the OCAR aware that the identity of the new CAMIS manager was known in the OCAR itself in April 1983?

Question. Does the OCAR consider it to be an example of effective management that the correct identity of the second CAMIS manager was in open, informal circulation, while the request for an MRD extension by the first manager, languished in the personnel office of FORSCOM? If so, please explain how this situation is demonstrative of effective management.

Question. Was the FORSCOM personnel office directed not to act on the MRD extension request of the first CAMIS manager? If so, by whom?

Question. In July 1983, having at last been advised that his request for an extension was denied, the first CAMIS manager wrote to the ASA (IL&FM) appealing the denial. OCAR received a copy. What action, if any, did OCAR take?

Question. Did the OCAR support its CAMIS manager in his appeal to the ASA (IL&FM)? If so, how and when? If not, why not?

Question. Was the OCAR directed not to involve itself in the appeal of its own manager? If so, by whom?

Question. Was the office of the ASA (IL&FM) advised by the Army to allow the request for an MRD extension to be resolved through normal command channels? If so, who so advised the ASA (IL&FM)?

Question. In the view of the OCAR, after receipt of the September 19, 1983, Disposition Form what specific managerial authorities and responsibilities did the first CAMIS manager retain?

Question. In the view of the OCAR, what did it mean on September 19 when the CAMIS manager was advised that thereafter all internal and/or external CAMIS actions were subject to approval and release by the FORSCOM DCSIRM, and that operational and administrative control were also in the hands of the FORSCOM

DCSIRM? Could such notification be characterized as a vote of confidence?

Question. In the view of the OCAR, was the intent of the September 19 notification to make the position of the CAMIS manager untenable? If not, what does the OCAR believe was the intent of the notification?

Question. During the period January 1, 1983, to November 30, 1983, how many Army Reserve Officers were serving on active duty by virtue of having been granted extensions to their MRD's prior to January 1, 1983?

Question. Between January 1, 1983, and June 30, 1983, how many Army Reserve Officers serving on active duty were granted extensions to their MRD's?

Question. Between July 1, 1983, and November 30, 1983, how many Army Reserve Officers serving on active duty were granted extensions to their MRD's?

Question. What qualifications, training, education, skills, experience, and/or expertise were found in those Reserve Officers serving on active duty during the period January 1 to November 30, 1983, by virtue of having been granted MRD extensions prior to January 1, 1983?

Question. What qualifications, training, education, skills, experience, and/or expertise were found in those Reserve Officers who were granted MRD extensions during the period January 1 to June 30, 1983?

Question. What qualifications, training, education, skills, experience, and/or expertise were found in those Reserve Officers who were granted MRD extensions during the period July 1 to November 30, 1983?

Question. The first CAMIS manager was a Reserve Officer serving on active duty, the holder of a Doctorate degree in Industrial Relations/Computer Science/Statistics, had served approximately 12 years of active commissioned service with a total of about 28 years of service. Immediately prior to his assignment to CAMIS he had served on active duty in systems analysis. Will the OCAR please explain precisely what prevented the Army from acting favorably on the above individual's request for an extension of his MRD?

[CLERK'S NOTE.—The Army could not or would not provide answers to these questions, which were based on an investigation by the Committee's Surveys and Investigations staff.]

CONTINUITY OF CAMIS PROGRAM MANAGEMENT

Question. In the spring of 1983 the individual who would become the second manager of the Continental Army Management Information System (CAMIS) in January 1984 was assigned to the office of the Assistant Secretary of the Army (ASA) for Manpower and Reserve Affairs (M&RA).

Did the Office of the Chief Army Reserve (OCAR) assign the second CAMIS manager? If so, what was the basis for the assignment? Was the OCAR directed to so assign this individual? If the OCAR was directed to so assign this individual, who provided such direction? Why was such direction given?

Question. Did the second CAMIS manager volunteer for the assignment? If so, what were his credentials for the assignment?

Question. If the OCAR did not assign the second CAMIS manager, who did? Was the OCAR consulted by whatever office made the assignment? What input did the OCAR provide? Did the OCAR recommend the second CAMIS manager for the job? If so, what was the basis for such a recommendation? If not, why not?

Question. In April 1983 what program management credentials did the individual who would become the second CAMIS manager possess?

Question. In April 1983 was the individual who would become the second CAMIS manager a boarded and certified project manager? If so, when was he boarded and certified? If not, why was he selected to manage a project with estimated total costs of approximately $650 million?

Question. Did the individual who became the second CAMIS manager ever become a boarded and certified project manager? If so, when? What course(s) did this individual take? Where were these courses taken?

Question. Was the individual who became the second CAMIS manager assigned to the office of the ASA (M&RA) during the period from April 1983 to January 23, 1984? If so, what were his duties? In the view of the OCAR, were the duties of this individual so vital to the office of the ASA (M&RA) that they justified detaining him from reporting to his CAMIS assignment for a period of 10 months?

Question. If the individual who became the second CAMIS manager was not in the office of the ASA (M&RA) in April 1983, where was he assigned at that time? What were his assignments between April 1983 and January 23, 1984? Were any of these assignments, in the view of the OCAR, of sufficient stature to justify detaining him from reporting to his CAMIS assignment for a period of 10 months?

Question. Why was the second CAMIS manager unable to report to the CAMIS project office until January 1984 when it was known at least as early as April 1983 that he was to fill the manager's job?

Question. Does the inability or unwillingness of the Army to allow the second CAMIS manager to report to the project office on a timely basis suggest to the OCAR that management of CAMIS is not an Army priority? If not, please explain how the Army's delay demonstrates that CAMIS management is an Army priority, particularly when that delay so obviously ignored the request from Ft. McPherson that the new project manager be allowed to report at the earliest possible date.

Question. On October 4, 1983, the first CAMIS manager requested that action be taken to terminate his active duty effective November 30, 1983. Between October 4, 1983, and November 30, 1983, what prevented the second CAMIS manager from reporting to the CAMIS project office to allow for maximum overlap with the departing manager?

Question. Is the OCAR aware of whether the departing CAMIS manager and the new CAMIS manager had any contact(s) between April 1983 and October 4, 1983? If these individuals had any contact(s) during this period that OCAR is aware of, please advise the nature of these contacts and who initiated them? Were any such contacts helpful to CAMIS? If so, how?

Question. Is the OCAR aware of whether the departing CAMIS manager and the new CAMIS manager had any contact(s) between October 4, 1983 and November 30, 1983? If there were any contacts during this period, please advise the nature of these contacts and who initiated them? Were any such contacts helpful to CAMIS? If so, how?

Question. Assuming there was no contact between the departing CAMIS manager and the new CAMIS manager between April 1983 and November 30; 1983, would the OCAR please explain how such a situation could be described as helpful to a project with estimated total costs of approximately $650 million?

Question. Did the OCAR direct the second CAMIS manager not to engage in any contact(s) with the departing CAMIS manager? If so, why?

Question. Was the OCAR directed to instruct the second CAMIS manager not to engage in any contact(s) with the departing CAMIS manager? If so, who gave such direction to the OCAR and why? Did the OCAR follow any such direction? If not, why not?

Question. Was the second CAMIS manager directed by any office not to engage in contact(s) with the departing CAMIS manager? If so, what office(s) gave such direction?

Question. Who directed the Chief Army Reserve (CAR) to assign a specific individual as the second CAMIS manager? Who gave the second CAMIS manager to the CAR?

Question. Is the individual who became the second CAMIS manager the same person whom the OCAR was directed to place in the job?

Question. Why was this individual deemed so important to the CAMIS project that his assignment as manager was a mandate to the OCAR? Who provided OCAR the identity of the individual who became the second CAMIS manager? Was the OCAR directed in writing to assign this individual as the second CAMIS manager? If so, who provided such written direction to OCAR?

Question. Is the CAR satisfied that the program management credentials of the individual who became the second CAMIS manager were sufficiently strong to allow him to take over a project with estimated total costs of about $650 million?

Question. Is the OCAR of the opinion that the absence of project management credentials and experience on the part of the second CAMIS manager was a factor in his being so vigorously pushed for the assignment?

Question. Do all the circumstances surrounding the assignment of the second CAMIS manager as well as his limited project management experience and credentials suggest to the OCAR that effectively managing and delivering CAMIS is not an Army priority?

Question. Did the direction to OCAR as to who should become the second CAMIS manager come from the office of the ASA (M&RA)? If so, please provide details of the direction.

Question. Did the direction come from the Office of the Assistant Secretary of the Army for Financial Management? If so, please provide details of the direction.

Question. Did the direction come from DAMO-C4? If so, please provide details of the direction.

Question. Did the direction come from the Army Director of Operations, Readiness and Mobilization? If so, please provide details of the direction.

Question. Does the OCAR believe that the automation needs of the Reserve Component are being adequately met by the Army? If so, what is the basis for such belief?

[CLERK'S NOTE.—The Army could not or would not provide answers to these questions, which were based on an investigation by the Committee's Surveys and Investigations Staff.]

DEMONSTRATION CAMIS VALIDATION SYSTEM

Question. In order to help validate Continental Army Management Information System (CAMIS) requirements, identify existing equipment in the Reserve Component, and to provide a limited capability until CAMIS was fielded, the product manager initiated an effort called the Demonstration CAMIS Validation System (DCVS). The DCVS was never intended to get big and was to be a prototype only.

In early 1982 the CAMIS product office and its DCVS was tasked to support the FY 1983 Mobilization Exercise (MOBEX 83) of the U.S. Army Forces Command (FORSCOM) and the Reserve Component. Did the tasking originate in the office of the Chief of Staff? If not, where did it originate?

Question. Did the tasking originate in the Mobilization Execution Branch of the FORSCOM Deputy Chief of Staff for Operations and Plans? If not, did that office participate with another office in the tasking to CAMIS and DCVS?

Question. When was the tasking to support MOBEX 83 given to CAMIS and DCVS?

Question. Why was the tasking given to the CAMIS product office and DCVS?

Question. Did the CAMIS product office attempt to avoid the tasking? If so, what were its arguments?

Question. How many people were assigned to the CAMIS product office in each one of the first four months of 1982?

Question. Was the CAMIS Ad Hoc Steering Committee aware of the MOBEX 83 tasking to DCVS? If so, did the Committee support the tasking? If not, why did the Committee not know of the tasking?

Question. Did the tasking by FORSCOM that CAMIS and DCVS support MOBEX 83 mean that FORSCOM viewed the CAMIS product office as a FORSCOM asset? If so, how was such a view consistent with the CAMIS charter approved July 30, 1981? If FORSCOM did not view the product office as its own asset, why did it task the product office to support MOBEX 83?

Question. Given the size of the CAMIS product office in early 1982, its level of expertise, and the magnitude of defining CAMIS requirements, does the Army believe the FORSCOM tasking to support MOBEX 83 was premature? If not, please explain what capabilities and time the product office possessed which made the tasking reasonable?

Question. Does the Army view the MOBEX 83 tasking as a complication to CAMIS and DCVS? If not, was it a dilution of the original DCVS effort?

Question. Does the Army believe the original DCVS, a prototype, was enlarged when it was required to support MOBEX 83? If not, why not?

Question. Did the tasking to support MOBEX 83 tend to support a bottom-up development approach and weaken the top-down approach preferred by the product manager? If not, how did the tasking to support MOBEX 83 using DCVS support the top-down delivery approach?

Question. Is it correct that the original scope of DCVS was expanded to support MOBEX'83?

Question. Is it correct that DCVS was expanded into the Developmental Automated Reserve Component Management System (DARMS)?

Question. Is it correct that the first DARMS has been rechristened the Developmental Army Readiness and Mobilization System and that as of April 1986 actions are ongoing to expand the new DARMS? What funds are budgeted by appropriation in each fiscal year 1985 to 1987 to expand DARMS?

Question. Is it correct that the progression from DCVS represents improvements and expansions of what was to be an interim capability?

Question. Is it correct that CAMIS is an unfunded requirement for FY 88?

Question. Is the movement from DCVS to the second DARMS designed to create the illusion that an operational CAMIS has been delivered to the Reserve Component?

Question. Is the movement from DCVS to the second DARMS the triumph of the bottom-up acquisition approach?

[Clerk's note.—The Army could not or would not answer these questions, which were based on an investigation by the Committee's Survey and Investigations Staff.]

CAMIS SOLE SOURCE CONTRACTING

Question. On July 2, 1982, the Army approved a sole source contract to the Rehab Group Inc. One of the justifications for the sole source contract was the tasking that Demonstration CAMIS Validation System (DCVS) support MOBEX 83 and meet U.S. Army Forces Command (FORSCOM) mobilization exercise commitments.

Was an In Process Review (IPR) presented at HQDA on or about December 11, 1982, as recommended at which Vertical Installation Automation Baseline (VIABLE) compatible solutions were considered as prime alternatives for CAMIS implementation? If so, when did such an IPR(s) occur? Who was present at each such IPR? What was discussed at each such IPR? What decisions were made as a result of each such IPR?

Question. If no such IPR was presented at HQDA during the December timeframe as recommended, why was one not presented?

Question. Was there ever an IPR presented at HQDA as recommended at which VIABLE compatible solutions were considered as prime alternatives for CAMIS implementation? If not, why not, since the July 2, 1982, approval of the sole source contract was based on the earlier approval of the 8A setaside approach which recommended an IFR not later than six months after approval?

Question. Was the CAMIS manager or his product office ever told between May 1982 and August 1983 in clear, technically explicit language what VIABLE is; its communications capabilities, its hardware configuration, the capability of its operating software, its processing capacity, its interfaces with other Army systems? If so, on what specific occasions was such information provided? What specific information about VIABLE was furnished on what specific occasions and in what format?

Question. Was the CAMIS product office ever told whether the scope and/or provisions of the VIABLE contract would allow it to assume CAMIS requirements? If so, when?

Question. Was the Commander of the U.S. Army Information Systems Software Support Command correct in March 1985 when he said the current VIABLE contract does not provide for the changes required to take on new requirements and must be renegotiated? If not, please identify the provisions of the current VIABLE contract which allow VIABLE to assume new requirements, for example, CAMIS.

Question. Was the CAMIS product office ever told how VIABLE, whose baseline did not include CAMIS requirements, particularly its communications requirements, could satisfy the automation needs of the Reserve Component? If so, on what occasion(s) and what information was provided to the CAMIS product office?

Question. Has the Army ever conducted a cost benefit analysis as to whether it would be cost effective to run CAMIS as a software application on VIABLE? If so, when was the analysis performed? Who conducted it? Was the CAMIS product office given the results? If so, when was the CAMIS product office given the results? What were its comments?

Question. Given that one of the justifications for the sole source contract to RGI was the support it would provide to DCVS during MOBEX 83, what did RGI provide in support of MOBEX 83?

Question. Did RGI put the DCVS networking together in support of MOBEX 83? If not, who did?

Question. Did RGI procure the hardware necessary to support MOBEX 83? If not, who did?

Question. What specific personnel did RGI provide to support DCVS in its support to MOBEX 83 and what precisely did those people do?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which were based on an investigation by the Committee's Surveys and Investigations Staff.]

CAMIS JUDGE ADVOCATE REVIEW

Question. The Staff Judge Advocate (SJA) of the U.S. Army Forces Command (FORSCOM) conducted a review of the solicitation to procure System Engineering and Technical Support (SETS) for the Continental Army Management Information System (CAMIS). The results of the SJA review were set out in a document dated August 4, 1982, directed to the FORSCOM Deputy Chief of

Staff for Logistics. The SJA questioned the necessity for a 780 day sole source contract and questioned the sufficiency of the justification for it.

What office wrote the solicitation which the SJA reviewed and commented upon in its August 4, 1982, critique?

Question. Who tasked that office to write the solicitation? When was the tasking made? What was the suspense date by which the solicitation was to be written? When was the writing of the solicitation completed?

Question. To whom was the solicitation first given upon its completion?

Question. Who provided it to the FORSCOM SJA?

Question. Were all the shortcomings and inadequacies in the solicitation as pointed out by the SJA corrected prior to it being given to RGI? If not, why not? Which corrections suggested by the SJA were not made?

Question. Were the additions and deletions suggested by the SJA made? If not, why not? Which additions were not made? Which deletions were not made?

Question. Were the various objections to the SETS solicitation pointed out by the SJA overruled? If so, by whom, and for what reason(s)?

Question. Was another solicitation to obtain CAMIS SETS written after August 4, 1982? Did the SJA review it? If so, what comments did it make? If the SJA did not review it, why did it not do so?

Question. Was the poor quality of the solicitation reviewed by the SJA the result of a rush by FORSCOM to enter into a sole source contract with RGI prior to October 1, 1982, and prior to Mobilization Exercise in 83? If not, why was the SETS solicitation of such poor quality that the FORSCOM SJA was compelled to register such strong opposition to it?

Question. Why was no contractor besides RGI able to perform CAMIS requirements in late FY 83 and thereafter?

Question. Who wrote the Statement of Work (SOW) which is part of the September 1982 RGI contract? Did RGI write the SOW? Did RGI write any part of the SOW?

Question. Is the language of the SOW the same type language the SJA found so wanting in the solicitation, namely, vague and indefinite as to specifically what is required to be delivered?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation done by the Committee's Surveys and Investigations Staff.]

CAMIS AD HOC STEERING GROUP

In February 1982 the CAMIS Ad Hoc Steering Committee was charged with the responsibility of correctly stating U.S. Army Forces Command (FORSCOM) problems relative to CAMIS, ensuring the right level of user involvement, and satisfying user needs. In September 1982 three conceptual solutions were presented to the Steering Committee by a contractor after having been circulated to users. A majority of principal CAMIS users, the Continental U.S. Armies, had known its preferred solution was the decentralized approach, while one principal user preferred the combination approach. The Steering Committee decided that CAMIS would follow the VIABLE solution and satisfy users with centralized, mainframe processing.

What individuals comprised the CAMIS Ad Hoc Steering Committee in September 1982?

Question. Who chaired the Steering Committee in September 1982?

Question. What information processing and information resources management expertise did the Steering Committee possess in September 1982? What systems analysis expertise did the Steering Committee possess in September 1982?

Question. Is it correct that whatever such expertise the Steering Committee possessed in September 1982 and found principally in the person of the FORSCOM Automation Management Officer?

Question. Is it correct that the FORSCOM Automation Management Officer was a public and vocal supporter of VIABLE and its centralized mainframe processing approach?

Question. Is it correct that the FORSCOM Automation Management Officer was intimately involved in replacing IBM 360 machines at FORSCOM installations with IBM 4331 machines to handle installation processing?

Question. Is it correct that the September 1982 briefing to the Steering Committee concerning the three conceptual solutions was originally to be informational? If not, what was the original purpose of the September 1982 briefing?

Question. Who decided that the Steering Committee would actually select one of the conceptual solutions as the way CAMIS would meet its requirements?

Question. Did the Steering Committee itself decide it would take on that responsibility? If so, are there minutes of the Steering Committee meeting at which the Committee decided to select one of the conceptual solutions? If not, why not?

Question. Did any member of the Steering Committee express the view that the September 1982 briefing was not intended to result in one of the conceptual solutions being selected? If so what arguments were made in support of not selecting one of the conceptual solutions?

Question. Did the Steering Committee vote on whether it should select one of the conceptual solutions? If so, when? What was the result of the vote?

Question. The CAMIS Ad Hoc Steering Committee selected the VIABLE centralized mainframe processing approach of CAMIS. Why did the Steering Committee choose this conceptual solution?

Question. Given the fact that none of the Continental U.S. Armies had expressed a preference for the VIABLE approach, why did the Steering Committee select precisely that solution?

Question. How can the Steering Committee be said to have been satisfying user needs when it selected a conceptual solution no Continental U.S. Army user found acceptable?

Question. One of the responsibilities of the Steering Committee was to ensure the right level of user involvement. How did the Steering Committee meet that responsibility when it ignored the stated preferences of CAMIS users who had reviewed the conceptual solutions and who presumably knew their own requirements?

Question. The CAMIS MENS called for an A109 acquisition approach. Was the selection of the VIABLE centralized processing approach in harmony with the MENS? If so, how?

Question. Why did the Steering Committee take it upon itself to select one of the conceptual solutions briefed to it in September 1982?

Question. Was the Steering Committee acting within the scope of its charter and/or responsibilities when it selected one of the conceptual solutions as the way CAMIS should proceed? If so, where is it stated that the Steering Committee had the prerogative to overrule the acquisition approach set forth in the approved CAMIS MENS?

Question. Did the action of the Steering Committee undermine the CAMIS product manager who supported the MENS and the A109 approach? If not, how did it support the product manager and the MENS?

Question. How did the selection of the VIABLE approach by the Steering Committee which did not support the MENS, nor the users, nor the product manager contribute to advancing the CAMIS effort?

Question. Does the Army consider the singular action of the Steering Committee in September 1982 to be an example of effective CAMIS management? If so, please explain the advantages to CAMIS and its users which resulted from the Steering Committee action.

Question. Did the Steering Committee vote on which conceptual solution to choose? If so, was the vote unanimous? If not, please provide the details of the Steering Committee vote on which conceptual solution to select.

Question. The three conceptual solutions were briefed to the Steering Committee by a contractor. Is it correct that his presentation favored the VIABLE solution?

Question. In September 1982 did that contractor have any business relationship with Electronic Data Systems (EDS) Corporation as a consultant, adviser, or employee, either part time or full time? If so, please provide details of this individual's September 1982 relationship with EDS.

Question. Did that contractor have any such business relationship(s) with EDS after September 1982? If so, please provide details of this individual's pre-September 1982 relationship with EDS.

Question. Did that contractor have any such business relationship(s) with EDS after September 1982? If so, please provide details of this individual's post-September 1982 relationship with EDS.

Question. In September 1982 did that contractor itself have any contractor and/or sub-contractor relationship with EDS separate from CAMIS and/or the Demonstration CAMIS Validation System? If so, please provide details of its September 1982 relationship with EDS.

Question. Was the contractor which presented the three conceptual solutions to the Steering Committee later discovered by the

CAMIS product office to have billed the Government twice for the same expense(s)?

Question. Did the CAMIS product manager subsequently request the contractor to remove any individual from any involvement with the CAMIS effort? Did the contractor comply with that request?

Question. The CAMIS product manager briefed the Steering Committee as to the views of the Continental U.S. Armies and which conceptual solution(s) they preferred. Why was the product manager subsequently asked to leave the briefing room? Was the Steering Committee thereby deprived of input during its deliberations from the one person presumably most interested in delivering CAMIS and satisfying its users? If not, how did the absence of the product manager assist the Steering Committee in its examination of the three conceptual solutions?

Question. Is the decision of the Steering Committee to select the VIABLE conceptual solution for CAMIS early evidence that despite the CAMIS MENS, despite user preferences, despite what the product manager wanted, and despite the fact that CAMIS requirements were not part of VIABLE, the Army was determined to run CAMIS on VIABLE? If not, why not?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

CAMIS DUAL TASKING

Question. During the 1978 timeframe the Army wrote an Army Command and Control Master Plan (AC^{2}MP) to capture the Army's automation needs in the C^2 arena. The plan had subsequently been updated and in 1982 the Army decided to update it once again. The U.S. Army Forces Command (FORSCOM) was tasked to look at the automation needs in mobilization and deployment in order to update the mobilization portion of the AC^{2}MP. The AC^{2}MP update job was assigned to the product office of the Continental Army Management Information System (CAMIS).

Where did the tasking to update the mobilization portion of the AC^{2}MP originate? Did it originate at Ft. Leavenworth? If so, with what specific command or activity?

Question. Was the tasking directed by its originator to FORSCOM? If not, to which specific activity or element on Ft. McPherson was the tasking directed by its originator?

Question. Was it directed to the FORSCOM Automation Management Office?

Question. When was the tasking to update the mobilization portion of the AC^{2}MP first laid on FORSCOM?

Question. Between the date of that first tasking and January 1983 what specific action was taken by FORSCOM to respond to it? What specific documentation, correspondence, memoranda and/or other communications were produced? What office first responded to the AC^{2}MP tasking and what office(s) produced the first response(s)?

Question. Is it correct that the tasking to update the mobilization portion of the AC^{2}MP had been known to FORSCOM, and been partially responded to, for an extended period of time prior to January 1983?

Question. Prior to January 1983 was the CAMIS product office involved with updating the mobilization portion of the AC^{2}MP? If so, how? Who directed such involvement? Why?

Question. During January 1983 or thereabouts the FORSCOM DCSOPS directed the CAMIS product office to respond to the AC^{2}MP update tasking. Why was this tasking given to product office?

Question. As chairman of the Ad Hoc Steering Committee, and knowledgeable about what the product office was doing, did the DSCOPS believe that product office had the staff, expertise, and time to effectively update the AC^{2}MP and deliver CAMIS?

Question. Was the AC^{2}MP tasking a distraction to CAMIS? If not, why not?

Question. Why did the AC^{2}MP tasking not go to the FORSCOM Automation Management Office? Why did it not remain there?

Question. Did the CAMIS product manager resist the AC^{2}MP tasking? What were his arguments against the tasking? Why did the DCSOPS find them inadequate?

Question. Did AC^{2}MP tasking mean that the FORSCOM DCSOPS viewed the CAMIS product office as simply another FORSCOM asset subject to meeting the needs of FORSCOM? If not, what is the correct view?

Question. Given the degree of resistance put up by the product manager to the AC^{2}MP tasking, and the personal awareness by the DCSOPS of the magnitude of the CAMIS effort, was it effective management to saddle a $650 million project with a tangential job which quite reasonably could have gone elsewhere? If so, how was this an example of effective CAMIS management?

Question. How was the AC^{2}MP tasking consistent with the CAMIS charter which called upon Army organizations to support CAMIS rather than calling upon CAMIS to support others?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

ISP–CAMIS

Question. A Memorandum for the record dated February 23, 1984, documents the main decisions made at the Information Systems Planning (ISP) Contractor Support meeting which took place on February 17, 1984, at the U.S. Army Forces Command (FORCOM). The meeting was held to discuss contractor tasks and issues associated with FORSCOM's ISP implementation.

Item 3, of the memorandum deals with overall FORSCOM Deputy Chief of Staff for Information Resources Management (DCSIRM) ISP requirements for the contractor. Section 3. a. states, "Complete the ISP architectures (Data, Application, Geographic, ISP-CAMIS)." What is the ISP-CAMIS which is referred to in section 3. a.? Is/was the ISP-CAMIS a part of the CAMIS Mission Element Needs Statement (MENS)? If so, where does it appear? Is/was the ISP-CAMIS part of the CAMIS project? If so, what role did, or does, it play in CAMIS? Is the term ISP-CAMIS an attempt to overlay FORSCOM ISP requirements on CAMIS and make them appear part of CAMIS? Did CAMIS pay Rehab Group, Inc. to complete all the ISP architectures mentioned in section 3. a., or any of those ISP architectures? If so, for what part(s) did CAMIS pay and how much did CAMIS pay? From what appropriation(s) was the money drawn?

Item 4, section 4. h. states, "The CAMIS-ISP compare, when completed, will be used to evalute the level of detail for the ISP architectures." What was the CAMIS-ISP compare? Who conducted the compare? Did CAMIS pay, in whole or part, for the CAMIS-ISP compare? If so, why? If so, how much did CAMIS pay, from what apropriation(s) did the money come, and who approved the use of CAMIS funds to pay for the compare? What was the benefit, if any, to CAMIS from conducting the compare?

Question. Item 5, of the memorandum deals with, "Decisions made concerning contract and resource issues * * *" and section 5. b. states, "The existing CAMIS contract will be used to accommodate appropriate swapout and expansion tasks." What were the appropriate swapout and expansion tasks it was decided the CAMIS contract should accommodate? Does accommodate in section 5. b. mean pay for?

Question. Does section 5. b. mean that it was decided on February 17, 1984, by those in attendance to use the CAMIS contracts to pay for tasks which were not CAMIS tasks, for example, FORSCOM ISP contract support? If not, precisely what is the meaning of section 5. b.?

Question. Item 6, of the memorandum deals with, "The direction and next steps for contract support * * *" and section 6. b. states in part, "Swapout existing CAMIS Task 7 tasks for other high priority ISP tasks." Does this mean that FORSCOM ISP tasks were to replace CAMIS tasks and their accomplishment be paid for by CAMIS? If not, precisely what is the meaning of section 6. b.? Is it correct that section 6. b. is a logical step pursuant to section 5. b.?

Question. What authority did the group which met on February 17, 1984, have to make the decision set forth in section 5. b. and section 6. b. of the memorandum?

Question. Section 5. c. states, "There are currently FY 84 OMA [Operations and Maintenance Army] and OMAR [Operations and Maintenance Army Reserve] monies to use for ISP contractor support." Are the OMA and OMAR monies referred to in section 5. c. CAMIS monies? If not, whose monies were they? If these monies were CAMIS monies does section 5. c. mean that the group which met on February 17 decided to use CAMIS monies to pay for FORSCOM ISP contractor support? If not, what does section 5. c. of the memorandum mean?

Question. Section 5. c. states, "Modify the CAMIS contract to accommodate high priority expansion tasks. The FY 84 ISP-CAMIS OMAR monies can be used for this." Does this direction mean that the group which met on February 17 decided to spend FY 84 CAMIS OMAR monies on FORSCOM ISP tasks? If not, what precisely is the meaning of section 6. c. of the memorandum?

Question. What authority did the group which met on February 17 have to make the decision set forth in section 6. c.?

Question. Did the CAMIS representative support the use of CAMIS monies to pay for FORSCOM ISP tasks and ISP contractor support? If so, why? If not, why not?

Question. Were FY 84 OMA and OMAR monies of CAMIS used to pay for FORSCOM swapout and expansion ISP tasks? If so, why? If so, how much CAMIS OMA money was so used? If so, how much CAMIS OMAR money was used?

Question. Was the decision set forth in section 5. b. ever changed? If so, how, and when?

Question. Were the directions set forth in sections 6. b. and 6. c. ever changed? If so, how was each changed, and when?

Question. Is it correct that the only expense CAMIS should have paid was that necessary to match its data elements with the FORSCOM data elements contained in the ISP standards? Is it also correct that CAMIS funds were used to pay for FORSCOM ISP contractor support? Is it also correct that after an unsuccessful experience with another contractor, the Rehab Group, Inc. provided FORSCOM ISP contrator support and was paid with CAMIS funds?

Question. A postscript to the February 23, 1984, memorandum states that, "The main points of this [memorandum] were discussed with * * * Rehab Group, Inc., to assure understanding and direction and to quickly establish swapout tasks." Does this kind of mutual decisionmaking support the complaint registered only days later by an official of the Office of the Chief, Army Reserve who protested in writing that, "It appears that REHAB has taken over too much of the CAMIS project and is in essence, the Program Manager. They are in control, rather than being controlled." If not, why not?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

HEADQUARTERS ARMY "MANAGEMENT" OF CAMIS

Question. By means of a Memorandum of Understanding dated February 17, 1984, the Operations, Readiness and Mobilization Directorate of the Army Deputy Chief of Staff for Operations and Plans (DAMO-OD) was designated the Department of the Army Headquarters functional proponent for the Continental Army Management Information System (CAMIS).

Did DAMO-OD make any attempt to settle the dispute between the CAMIS Product Manager (PM) and the FORSCOM DCSIRM? If so, what specific actions did DAMO-OD initiate? What were the responses to these actions?

Question. Why were these actions unable to resolve this issue within a reasonable period of time?

Question. Is it the position of DAMO-OD that allowing a struggle over turf rights to drag on for a period of 18 months is effective project guidance and coordination? If not, why was this quarrel not resolved in a timely fashion?

Question. Is it the position of DAMO-OD that CAMIS, a project with estimated total costs of approximately $650 million, could be effectively managed by an individual acting without a charter? If not, why was DAMO-OD unable or unwilling to resolve a matter which was clearly within the scope of its responsibilities?

Question. In the matter of the turf struggle, does the inability or unwillingess of DAMO-OD to exercise its full management responsibilities as stated in the February 17, 1984, Memorandum of Understanding suggest the Army is unable to effectively and efficiently manage a large-scale automation procurement? If not, please explain how this protracted turf struggle and the apparently passive role of DAMO-OD contributed to the CAMIS project.

Question. Was DAMO-OD directed not to resolve the issue between the CAMIS PM and the FORSCOM DCSIRM? If so, who so directed DAMO-OD?

Question. Was DAMO-OD given assistance in resolving this dispute? If so, what organizations provided assistance and what was the specific contribution of each organization?

Question. Was the DAMO-OD hindered in its efforts to resolve this dispute? If so, what organization is engaged in such activity and what was the nature of such activity?

Question. With particular reference to CAMIS, is the extended turf struggle between the CAMIS PM and the FORSCOM DCSIRM an indication that management of CAMIS is not an Army priority? If not, why was DAMO-OD, from its vantage point at Department of the Army, unable to successfully coordinate development of a draft charter and, on a timely basis, secure appropriate approval?

Question. The office of the Army Inspector General concluded as a result of its investigation into CAMIS that Army Regulation (AR) 70-17 was violated when the CAMIS PM was without a charter from January 1984 to June 1985. In February 1984 was DAMO-OD aware of AR 70-17 and its provisions relative to project management? If not, why not, given its responsibilities in the February 17, 1984, Memorandum of Understanding? If DAMO-OD was aware in February 1984 of AR 70-17, why did it fail to move forcefully to resolve the turf struggle/charter issue on a timely basis so as to be in conformity with the regulation?

Question. Did DAMO-OD nominate the individual who became the CAMIS PM in January 1984? If so, what was the basis for that nomination? Was DAMO-OD directed to nominate that individual? If so, who provided that direction?

Question. If DAMO-OD did not nominate the individual who became the CAMIS PM in January 1984, who did?

Question. When the individual who became the CAMIS PM in January 1984 was nominated for the job, was he a boarded and certified PM? If not, what were his credentials for the position?

Question. The identity of the CAMIS PM who reported to the Project Office in January 1984 was known in March 1983. In July 1983 FORSCOM requested that this individual be allowed to report as soon as possible to allow maximum overlap with the departing manager. Why was the FORSCOM request unable to be satisfied? What duties prevented the CAMIS PM from reporting to the Project Office until January 1984? Was FORSCOM advised in writing as to why its request would not be honored? If so, what is the date and type of that communication?

Question. Did DAMO-OD, as the functional proponent of CAMIS, protest that delaying the reporting date of the new PM could have a negative impact on the project? If so, to whom were these protests made? If no protest was made, why was one not made?

Question. Is it the position of DAMO-OD that preventing the PM of a project with estimated total costs of approximately $650 million from assuming his duties for 10 months after his identity is known is effective management? If not, what action did DAMO-OD take to mitigate the effects of what appears to be inadequate project management, coordination, and prioritization?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

ARMY TESTIMONY ON CAMIS

Question. In a formal record statement dated April 1, 1985, the Chief Army Reserve (CAR) furnished information on the status of the U.S. Army Reserve to the House Armed Services' Subcommittee on Procurement and Military Nuclear Systems. The statement reflects that a Request for Proposal (RFP) for the Continental Army Management Information System (CAMIS) had been released to industry and responses to that RFP were being evaluated and that a compute-off contract would be awarded to the two or three top proposals in the first quarter of FY 1986. The CAMIS Source Selection Evaluation Board (SSEB) had begun its evaluation of responses to the RFP in January 1985 but in April 1985 was advised its evaluation efforts were suspended. On May 17, 1985, the CAMIS SSEB work was formally halted.

Was the Army aware at the time of the formal record statement to the Subcommittee that within a matter of days the CAMIS SSEB would be advised that its work was suspended? If so, why was the Subcommittee not alerted to this important pending action, the reasons for it, and its impact on the project?

Question. If the CAR was not aware at the time of his statement that within a matter of days the CAMIS SSEB would be advised that its work was suspended it would appear he was uninformed about an upcoming near term action of great significance. Was the CAR aware at the time of his statement that within days the CAMIS SSEB would be advised that its work was suspended? When did the CAR become aware?

Question. If the CAR was not aware at the time of his statement that within days the CAMIS SSEB would be advised that its work was suspended, should the Congress conclude that the CAR had no opportunity to influence that decision?

Question. Did the CAR or his representative(s) participate in discussions about suspending the work of the CAMIS SSEB? If so, when did these discussions occur? What other offices participated in these discussions?

Question. What were the reasons for suspending the work of the CAMIS SSEB?

Question. Did the CAR support the decision to suspend the work of the SSEB? If not why not?

Question. When was the decision made to suspend the CAMIS SSEB? Was the SSEB formally advised? If so, when and by whom?

If not, how did the board members become aware in April that their work would shortly end?

Question. Who directed that the CAMIS SSEB be suspended?

Question. Was the decision to suspend the CAMIS SSEB delayed until after submission of the formal record statement by the CAR in order that the statement would be technically correct at the time of its submission? If so, did the CAR support such action? If not, why not?

Question. Was the decision to suspend the SSEB made before April 1, 1985, but notification to the SSEB delayed until after submission of the formal record statement by the CAR? If so, why? Did the CAR support such action? If not, why not?

Question. Given the fact that almost concurrent with submission of the formal record statement its noteworthy comments concerning the evaluation of CAMIS proposals were overcome by events, was the Subcommittee or any other Congressional Committee advised in any way of these events? If not, why not?

Question. The statement submitted by the CAR on April 1st did not reflect any apprehension about the A109 acquisition approach of CAMIS and predicted that a compute-off contract would be awarded. Why was the same CAMIS acquisition approach which the CAR found satisfactory such an anathema to the Army Assistant Chief of Staff for Information Management (ACSIM) and the Commander of the Information Systems Command (ISC) that they suspended evaluation of the proposals? Do the ACSIM, the Commander of ICS, and the CAR communicate on CAMIS? Is the CAR satisfied with the extent and nature of the communication?

Question. Was the formal record statement to the Subcommittee accurate?

Question. Was the Army in error when it suspended the SSEB? If so, why was it in error?

Question. Was the formal record statement to the Subcommittee inaccurate? If so, why was the CAR put in the position of providing information to the Congress which the ACSIM and ISC presumably knew to be less than accurate?

Question. How did the CAMIS A109 acquisition approach come to be simultaneously viewed in April 1985 so differently by the CAR, the ACSIM and ISC?

Question. Is it the view of the CAR that CAMIS has been effectively managed by the Army and the automation interests of the Reserve Component well served?

[CLERK'S NOTE.—The Army could not and would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

IMPROVED CAMIS MANAGEMENT

Question. In an action memorandum dated March 6, 1984, the Chief, Army Reserve was advised of certain conclusions, comments, and recommendations concerning Army management of the Continental Army Management Information System (CAMIS). By letter dated June 8, 1984, signed by the second CAMIS manager, responses to the action memorandum were forwarded to the Chief, Army Reserve.

The March 6 action memorandum includes strongly worded conclusions relating to CAMIS expenditures, project delays, irresponsible tactics, and concludes with six recommendations. Why was the CAMIS project manager unable to respond for over 90 days to a communication which begged for immediate response?

Question. Who wrote the June 8 response to the March 6 action memorandum?

Question. Did the CAMIS project manager write it?

Question. Did representatives of a contractor write in the response? Did contractor representatives participate in writing the response? If so, why? If so, which specific portions of the June 8 response did a contractor participate in writing?

Question. Who provided the contractor with a copy of the March 6 action memorandum which, among other things, recommended replacing the contractor and ending its sole source CAMIS contract?

Question. Did the Deputy Chief, Army Reserve provide it to the contractor? If so, why? When?

Question. Did the second CAMIS manager provide it to the contractor? If so, why? When?

Question. Was the contractor provided a copy of the March 6 action memorandum as a gesture of cooperation to a firm in which four, and possibly more, retired Army officers hold positions of responsibility and/or ownership?

Question. The June 8 response to the action memorandum agrees that CAMIS needed to be brought under adequate management control, to regain momentum, and claims that assignment of a new manager in January 1984 accomplished that. Does item 2. a. mean that prior to January 1984 CAMIS did not have adequate management control and momentum? If so, please provide specific examples of inadequate control and detail what brought about that inadequate control.

Question. What specific credentials and project management experience did the second CAMIS manager bring to the job to enable adequate project management and momentum to be re-established?

Question. How could the CAMIS manager claim in June 1984 that control had been re-established when at the same time he had no charter and was in the sixth month of an 18 month struggle to be recognized as the CAMIS project manager rather than a CAMIS Branch Chief?

Question. Item 2. b. of the June 8 response says in part that, "Prior to September 1983, the project had been directed by a small, closed group without adequate communications between the appropriate players, even within the Project Office. Because of the lack of communications, especially in the chain of command, hostility and resentment toward the CAMIS Project had developed." Who were the members of the small, closed group who had directed CAMIS and created hostility and resentment toward CAMIS?

Question. What specific actions did this small, closed group take which created hostility and resentment toward CAMIS?

Question. What specific events occurred which demonstrated that hostility and resentment against CAMIS had developed?

Question. According to item 2. b. this small, closed group directed CAMIS prior to September 1983. What happened in September

1983 to change this condition? Did the September 19, 1983, Disposition Form change this condition? If so, how?

Question. Did a contractor write, or participate in writing, the two sentences quoted in question 12?

Question. Item 4 of the June 8 response, and its two enclosures, purport to answer the issue raised in part 2. b. of the March 6 action memorandum. Since the RGI contract costs data are only, "* * * the best estimate of what portion of the over all Rehab contract was in support of DCVS [Demonstration CAMIS Validation System] * * *," and came from RGI itself; and since all other expenses shown in the two enclosures, except for hardware and communications, are also only estimates it would appear that the information in Item 4 validates the issue but does not resolve it. Please comment.

Question. Item 11 of the June 8 response replies to part 2. i. of the March 6 action memorandum and begins, "There have been no incidences in which Rehab has taken an action relating to CAMIS Project Management which was not previously directed or approved by the CAMIS Project Manager." Does this mean the CAMIS Project Manager approved giving it CAMIS funding and programming data in 1984?

Question. Does this mean the CAMIS Project Manager approved giving it information in 1984 about funded requirements, unfunded requirements, and how much money CAMIS had for technical support?

Question. Does this mean the CAMIS Project Manager approved giving it in 1984 access to the CAMIS automated project management plan, access to CAMIS funding windows, approved RGI setting CAMIS milestones, and even approved RGI writing a task into its Statement of Work that they would provide management support?

Question. Is it correct that after January 1984 the CAMIS contractor became more than the support contractor, more than a supplement to the project office staff; it assumed, and was allowed to assume, too significant a management role? If not, why would it have been such an unmitigated "disaster" not to extend the contractor's sole source contract as stated in item 18. e. of the response?

Question. In 18. e. of the June 8 response the project manager estimated that, "* * * it would require approximately one year at a cost in excess of $4 million for another contractor to acquire the required knowledge and understanding of the project." How did the project manager arrive at these traumatic estimates? Were they provided by a contractor?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

ARMY ARCHITECTURE INTERFACE

Question. By communication dated March 26, 1985, the Commander of the U.S. Army Information Systems Software Support Command (USAISSSC) forwarded a seven page Integrated Architecture Implementation plan to the Assistant Chief of Staff for Information Management (ACSIM) and the Commander of the Information Systems Command (ISC). The plan provided a concept and established responsibilities for implementing a standard three tier architecture within the Army. Concerning the Continental Army Management Information System (CAMIS) the plan recommended tht the Army, "Continue evaluation of the [CAMIS] proposals and award contracts for development of the two most promising solutions for further evaluation in the compute-off." The plan continued, "After compute-off contracts are awarded and the offerors are being funded, direct necessary changes to achieve compatibility with the three tier architecture and insure software development is compatible with the corporate data base concept." By means of a formal record statement submitted to the Subcommittee on Procurement and Military Nuclear Systems only six days later, the Chief Army Reserve (CAR) advised the Subcommittee that vendor responses to the CAMIS Request for Proposal (RFP) were being evaluated and predicted that a compute-off contract would be awarded in the first quarter of FY 1986. By letter dated April 14, 1985, the Chief of Staff of the U.S. Forces Command (FORSCOM) advised Army Headquarters that over $40 million had been invested in CAMIS and that its mobilization requirements were valid and not covered by any other system. The letter pointed out that the CAMIS Source Selection Evaluation Board (SSEB) was reviewing proposals and suggested that CAMIS and its momentum be allowed to continue. On or about April 15, 1985, the Army suspended the CAMIS SSEB. As of April 1986 CAMIS is an unfunded requirement in FY 1988.

Why was the March 26, 1985, recommendation of the Commander of USAISSSC to continue evaluation of the CAMIS proposals unacceptable? Why did the ACSIM and the Commander of ISC suspend the SSEB?

Question. Why was the recommendation that after award of the CAMIS compute-off contracts(s) the vendors be directed to achieve compatibility with the three tier architecture, and be directed to ensure software development compatible with the corporate data base, unacceptable?

Question. Was the Commander of the USAISSSC kept uninformed about the views of the ACSIM and ISC Commander leading to the situation that less than 21 days after submitting his seven page plan and CAMIS recommendations, the SSEB would be suspended by the very individuals to whom he had directed those recommendations?

Question. Was the Commander of the USAISSSC aware of the concerns held by the ACSIM and ISC Commander about the CAMIS acquisition approach? If so, how was he made aware? If so, why did his March 26 CAMIS recommendations persist in advancing the compute-off acquisition approach so obviously unpalatable to the ACSIM and ISC Commander?

Question. Was the CAMIS acquisition approach recommended on March 26, 1985, by the Commander of the USAISSSC different from the approach recommended and pursued by the first CAMIS manager? If so, how?

Question. Was the CAR kept unaware of the concerns held by the ACSIM and ISC Commander about the CAMIS acquisition approach, leading to the situation that 14 days after submission of his formal record statement the SSEB was suspended?

Question. If the ACSIM and ISC Commander alerted the CAR to their deep concerns about the CAMIS acquisition approach, why did the CAR submit a statement optimistically describing an evaluation and acquisition process which would be suspended by the ACSIM and ISC Commander 14 days later?

Question. Was the formal record statement submitted April 1, 1985, to the Subcommittee on Procurement and Military Nuclear Systems intended to advise the Subcommittee about the real status of the CAMIS evaluation and acquisition process? If so, please explain how it accomplished that goal.

Question. Was the FORSCOM Chief of Staff kept unaware of the concerns held by the ACSIM and ISC Commander about the CAMIS acquisition approach leading to the situation in which he wrote a letter urging that the SSEB continue working, possibly on the very day the SSEB was suspended?

Question. If the ACSIM and ISC Commander alerted the FORSCOM Chief of Staff to their deep concerns about the CAMIS acquisition approach, why did he go on record vigorously supporting the very work the ACSIM and ISC Commander were then in the process of suspending?

Question. Do the events of March 26–April 15, 1985, suggest that people who should have been informed participants in vital CAMIS decision making were uninformed, non-participants? If not, why not?

Question. Do the recommendations of the Commander of the USAISSSC suggest there were courses of action available to the ACSIM and ISC Commander other than suspending the SSEB? If not, why was suspending the SSEB the best course of action?

Question. Does the decision by the Army to suspend the CAMIS SSEB, when viewed in the context of the events of March 26–April 15, 1985, suggest that CAMIS is a project the active Army does not want to deliver?

Question. Do the events of March 26–April 15, 1985, mean that the ACSIM is responsible for the status of CAMIS? If not, why not?

Question. Do the events of March 26–April 15, 1985, mean that the Commander of the ISC is responsible for the status of CAMIS? If not, why not?

Question. Who is directing and managing CAMIS toward achieving an operational capability? Who is responsible for CAMIS?

Question. Does the decision by the ACSIM and ISC Commander to suspend the CAMIS SSEB for reasons which were not clear to others somewhat knowledgeable about CAMIS, suggest that the active Army is, and has been, determined to force CAMIS onto the Vertical Installation Automation Baseline (VIABLE) system despite serious, continuing questions about its ability to satisfy CAMIS requirements? If not, how did suspension of the SSEB contribute to automating the Reserve Component?

Question. As of April 1986 how does the Army intend to satisfy CAMIS requirements?

Question. By delivering CAMIS as a software application package(s) to run on VIABLE, and by meeting CAMIS communications, hardware, and other requirements via the VIABLE contract, will the Army thereby be more readily able to use CAMIS as a funding source to meet VIABLE requirements?

Question. How can the Army assure the Congress that monies appropriated to satisfy CAMIS requirements will not be applied to satisfy VIABLE requirements?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

CAMIS CHRONOLOGY

Question. By memorandum dated February 13, 1986, from the Director of Operations, Readiness and Mobilization of the Department of the Army, Deputy Chief of Staff for Operations and Plans (DCSOPS), the Army Chief of Staff was advised that the Continental Army Management Information System (CAMIS), "* * * is a Total Army system under development to automate the Reserve Component (RC) mobilization and command and control processes." The Army Chief of Staff was also advised that the CAMIS, "Objective fielding date was FY 85, using an Army developed specifications contract. Successive architectural/funding issues * * * have delayed and extended CAMIS fielding to the FY 87-91, timeframe." The memorandum continues on to state that concern about whether CAMIS fielding will continue to slip is a central question and that, "The prospect of further slippage is especially frustrating to the Reserve Components—CAMIS represents a significant unfulfilled promise and a Total Army credibility issue." Attached to the February 13, 1986, memorandum is a, "Chronology of Issues Affecting CAMIS Deployment."

What caused the February 13, 1986, memorandum to be written?

Question. Is the memorandum presented to the Army Chief of Staff accurate about the CAMIS contract and other issues?

Question. Is it correct that in August 1981 a Project Manager was assigned to CAMIS? Is it correct that in August 1981 CAMIS was a Class II system?

Question. Is it correct that the individual assigned to manage CAMIS in August 1981 was in fact a Product Manager? Is it correct that in August 1981 CAMIS was a Class III system?

Question. The memorandum to the Army Chief of Staff states CAMIS was to be fielded in FY 1985 using an Army-developed specifications contract. What is the basis upon which this statement is made?

Question. Since the Mission Element Needs Statement (MENS) for CAMIS called for functional requirements to be identified and for industry to bid proposals which would satisfy those requirements, and the first CAMIS Product Manager supported this approach through Novemberr 1983, how was it impossible to advise the Army Chief of Staff that CAMIS was to be fielded in FY 1985 using an Army-developed specifications contract?

Question. Is it correct that in fact CAMIS has never been an Army-developed specifications contract?

Question. If CAMIS has ever been an Army-developed specifications contract, please provide full particulars of when it became such a contract, who directed that it become so, who implemented such an action, and whether it was ever changed from a specifications contract. If CAMIS was ever changed from an Army-developed specifications contract, please provide full particulars as above.

Question. Is it the position of the Army as stated in the February 13th memorandum that, "* * * CAMIS represents a significant unfulfilled promise and a Total Army credibility issue?" If not, why was this mutual position forwarded to the Army Chief of Staff?

Question. Given the view of CAMIS as set forth by the Army DCSOPS and the Director of Operations, Readiness and Mobilization, where does responsibility rest for the Army's failure, over a period of almost seven years, to fulfill the promise of CAMIS and deliver an operational automated capability to the Reserve Component?

Question. The chronology of issues affecting CAMIS deployment sets forth in item (1) that, "December 1982: Decision by CG, [Commanding General] FORSCOM [U.S. Army Forces Command] to procure under an A109 contract (industry-developed specifications as opposed to the original intent of using Army developed specifications contract) delayed initial deployment to FY 86." Since the 1979 CAMIS MENS clearly calls for an A109 procurement approach, the decision of the CG FORSCOM in December 1982 changed nothing and merely affirmed the MENS. How can his decision be said to have delayed the initial CAMIS deployment to FY 86? Since item (1) is so obviously inaccurate and the correct information is so readily available, why was such misinformation provided to the Army Chief of Staff?

Question. Is the chronology of CAMIS issues attached to the February 13th memorandum an attempt to rewrite the history of CAMIS?

Question. Does FORSCOM agree that it caused CAMIS to be delayed to FY 86?

Question. Item (2) of the chronology says, "August 1983: Decision by DAMO-C4 [Deputy Chief of Staff for Operations and Plans (Command, Control, Communications, Computers)] to standardize Army hardware led to reevaluation of the CAMIS program, based on concerns that the A109 contract permitted industry to develop hardware potentially incompatible with standard Army equipment. CAMIS RFP [Request for Proposal] was subsequently revised to dictate use of standard hardware. Result was delay/stretch in deployment schedule to FY 87-89 timeframe." Does the Army have a standard hardware? If so, what is that standard hardware? Is IBM hardware, or IBM compatible hardware, the standard Army hardware? What language in the CAMIS RFP and/or the A109 approach produced the concerns that industry might develop CAMIS hardware potentially incompatible with standard Army equipment? Where is the revised CAMIS RFP is the language used to dictate use of standard hardware?

Question. Is DAMO-C4 aware that the responsibility for delaying deployment of CAMIS to the FY 87-89 timeframe has been placed on its decision in August 1983 to standardize Army hardware?

Question. By what document(s) did DAMO-C4 make known its desire to standardize Army hardware and its concerns that the

A109 approach might have allowed vendors to propose hardware potentially incompatible with standard Army equipment?

Question. Item (6) of the chronology states that in March 1985 reprogramming action used CAMIS funds as a billpayer for higher priority requirements stretching final CAMIS deployment to FY 87-90. How much CAMIS money was reprogrammed? From what appropriations did that CAMIS money come? What specific higher priority requirements received CAMIS money? How much CAMIS money did each such higher priority requirement receive?

Question. Item (7) of the chronology states that in April 1985 the CAMIS Source Selection Evaluation Board (SSEB) was suspended because of continued concerns over the A109 acquisition approach. Who in April 1985 expressed continuing concerns over the A109 approach? Were the April 1985 concerns different from the concerns addressed by DAMO-C4 in August 1983? Were the April 1985 concerns the same ones addressed earlier by DAMO-C4? What were the specific April 1985 concerns with the CAMIS A109 acquisition approach?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

OPEN CAMIS ISSUES

Question. By memorandum dated February 13, 1986, the Army Chief of Staff was provided with information about the Continental Army Management Information System (CAMIS). The memorandum was coordinated with the Office of the Chief Army Reserve (OCAR). An enclosure to the memorandum is captioned, "CHRONOLOGY OF ISSUES EFFECTING CAMIS DEPLOYMENT."

Is item (1) of the chronology correct? If so, please explain why it is correct. If it is not correct, why is it not correct? If it is not correct, why did the OCAR participate in sending item (1) to the Army Chief of Staff?

Question. Is item (2) of the chronology correct in its entirety? If so, please explain why it is correct. If it is not correct in its entirety, what part(s) are in error? Why are they in error? If item (2) is incorrect, in whole or in part, why did the OCAR sign off on it?

Question. In view of the OCAR, what is the meaning of item (2) of the chronology?

Question. Does the Army have a standard hardware? If so, what is that standard hardware?

Question. The August 1983 direction from the Directorate of Command, Control, Communications, and Computers (DAMO C4) cited in item (2) has been described as a catastrophe to CAMIS and inconsistent with the CAMIS Mission Element Needs Statement. Does the OCAR support that direction? If so, why? Please explain how the August 1983 direction from DAMO C4 was beneficial to CAMIS.

Question. Was the real intent of the August 1983 direction from DAMO C4 to force CAMIS onto the Vertical Installation Automation Baseline (VIABLE) system over the repeated protests of the CAMIS management office and the CAMIS Product Manager? If not, please explain why such a view of the DAMO C4 action is incorrect.

Question. Is VIABLE hardware the standard Army hardware?

Question. Item (6) of the chronology advises the Army Chief of Staff that in March 1985 reprogramming action used CAMIS funds as a billpayer for higher priority requirements. How much money was reprogrammed out of CAMIS in March 1985? From what appropriation(s) was the CAMIS money reprogrammed? Did OCAR support the March 1985 reprogramming action? If so, why? What were the higher priority requirements which benefitted from the largesse of CAMIS?

Question. Since August 1981 have there been other occasions when CAMIS funds were reprogrammed to meet other requirements? If so, please state the total number of occasions, the amount of money reprogrammed on each individual occasion, from which appropriations each separate reprogramming action drew, and which projects benefitted from the CAMIS money.

Question. Did the OCAR support all the reprogramming actions described in its response to the question above? If not, which specific reprogramming actions did it not support, and why?

Question. In the view of the OCAR, has the CAMIS program been used as a funding source by the active Army for other efforts considered to be of higher priority, for example VIABLE?

[CLERK'S NOTE.—The Army could not or would not answer these questions, which are based on an investigation by the Committee's Surveys and Investigations Staff.]

BUDGET DATA

Question. For each major ADP system which has an exhibit 43A-1 in the current budget, compare for the record the fiscal years 1986, 1987, and total six year system funding to the amounts in last year's fiscal year 1986 budget for these systems (whether or not a formal 43A-1 was submitted in last year's budget). Explain significant differences in each funding category, and highlight upgrades and/or initiatives.

Army answer. The Department of the Army's answer is as follows:

System Name: Army National Guard Management Information System (ARNGMIS).

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: The establishment of the Department of the Army's Information Mission Area initiated an Army National Guard scrub of this system for the FY 1987 President's Budget submission. This scrub reflected additional Military Personnel, Army costs. Other changes consist of the procurement of leased equipment (Other Procurement, Army) and additional operation and maintenance costs for contracted maintenance and supplies.

System Name: Project 80X

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: The major change in the funding stream for Project 80X is due to the inclusion, in the FY 1987 President's Budget 43A-1 exhibit, of costs for Phase I of the project. Phase I is an interim program (Operation and Maintenance, Army costs) pending completion of Phase II. Other changes are due to Phase II's acquisition and fielding of equipment (Other Procurement, Army); and related maintenance contracts (Operation and Maintenance, Army). Phase I costs were not included in the FY 1986 President's Budget submission.

System Name: Standard Depot System (SDS)

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: The FY 1986 President's Budget 43A-1 exhibit contained a reporting error for this system which overstated total costs. This error was reflected in Army Industrial Fund (AIF) account collections from Army customers not being reported. This error was corrected in the FY 1987 President's Budget 43A-1 exhibit.

System No. 4: Tactical Army Combat Service Support Computer System (TACCS)

Reason for Difference of 30% or More: A comparison between the FY 1986 and FY 1987 President's Budget 43A-1 exhibits shows an increase in projected costs for the FY 86–90 time frame. This increase is due to the planned FY 1987 fielding of the system and consists of (1) costs for the fielding of TACCS, (2) costs for the development of software and hardware/software maintenance contracts (Operation and Maintenance, Army appropriation).

System No. 5: Vertical Installation Automation Baseline (VIABLE)

Reason for Difference of 30% or More: Plans to extend this system's service to sites under the U.S. Army Europe, and Seventh Army (USAREUR) command increased projected costs for the period of FY 86–90. Comparing the FY 1986 and FY 1987 President's Budget 43A-1 exhibits shows an increase primarily for (1) the procurement of hardware (Other Procurement, Army appropriation) and, (2) related maintenance and training costs (Operation and Maintenance, Army appropriation), and (3) engineering for site preparation. This resulted from two conditions. The FY 1986 President's Budget did not include all applicable operations and maintenance funding; and additional procurement funds were needed for the cost of expanded capability to solve VIABLE system saturation.

System No. 6: Army Worldwide Military Command and Control System (WWMCCS) Information System (AWIS)

Reason for Difference of 30% or More: The FY 1986 President's Budget submit for WWMCCS Information System (WIS) includes the Army's share of the research and development costs provided to the Joint Project Managers Officer which is administering the joint requirements for WIS. The FY 1987 President's Budget 43A-1 exhibit for the Army WWMCCS Information System (AWIS) includes only the Army-specific cost and excludes these joint research and development funds.

Air Force answer.

System Name: AFLC Logistics Force Management System Modernization Program

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: This AIS consists of logistics management information systems that are being developed to increase visibility and control of resources. Included in the AIS are the Stock Control and Distribution (SC&D), Engineering Data Computer Assisted Retrieval System (EDCARS), Air Force Requirements Data Base (RDB), Provisioning, and Intersite Gateway. Increase in procurement funds are for the individual large scale mainframes, remotes, terminals and peripherals required by identified projects. O&M changes reflect an increase for systems analysis and programming services for developing the identified projects.

System Name: Base Information Systems Program (Phase IV)

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Advanced Personnel Data System (APDS)

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Air Force Weather System Support

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Accounting & Finance and Reserve Forces Auto Data Processing System

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Changes in this AIS occur in the O&M appropriation primarily for maintenance of government owned equipment. This maintenance increase results from the Other Procurement appropriation adjustment for acquisition of hardware to support Centralized Civilian Pay, front end processor and capacity upgrade of the AMDAHL central processing units, and out year replacement/enhancement requirements supporting the Air Force Worldwide Pay Systems at the Air Force Accounting and Finance Center.

System Name: Automated Telecommunications System

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Air Staff and OSD Support

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Adjustment between years for this AIS reflects a decrease. The O&M appropriation reflects a decrease in the lease line accounting for the lease to purchase conversion of automatic data processing equipment. Other adjustments in O&M reflect a decreased funding profile for systems analysis and programming supporting the Improved Services Program. The Other Procurement appropriation also reflects a change in the funding profile for equipment supporting the implementation of the Improved Services Progam.

System Name: Military Airlift Command Integrated Management System (MACIMS)

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Tactical Air Control System (TACS) Support.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can

only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Defense Support Program.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: World-Wide Military Command & Control System (WWMCCS).

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Intelligence Support Systems (IDHS).

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Air Force Professional Education Support.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: ESC Cryptologic Program Support.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Command Center Processing & Display System (CCPDS).

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

Navy/MC answer.

System Name: Navy Laboratories Technical Office Automation and Communications System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Worldwide Military Command and Control System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Part of the increase was directed by the Defense Resources Board in August 1985 for funding the Commander in Chief, Mobile Command Centers. The remaining increase represents repricing of equipment by the Joint Program Manager (Air Force). Other Procurement, Navy (OPN) and Operations and Maintenance, Navy (O&MN).

System Name: Navy Command and Control System.

Discussion: FY 1987 is the first year this program was reported as a separate major automatic data processing system. Therefore, no comparison to FY 1986 can be made.

Reason for Difference of 30% or More: Not applicable.

System Name: Integrated Disbursing and Accounting Financial Information Processing System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Personnel/Pay Systems Consolidated Computer Center.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Additional funds for fully competitive procurement of replacement automatic data processing equipment for the Consolidated Data Center, Navy Finance Center, Cleveland. OPN.

System Name: Shipyard Modernization.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can

only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Uniform Automated Data Processing System—Inventory Controls Points.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Uniform Automated Data Processing System—Stock Points.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Stock Point Logistics Integrated Communications Environment (SPLICE).

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: The SPLICE program has been expanded to include seven additional sites. OPN & O&MN.

System Name: Trident Logistics Data System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Pay/Personnel Administrative Support System/Source Data System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Naval Air Rework Facilities Workload Control System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can

only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Naval Aviation Logistics Command.

Discussion: The out year program and dollar estimates provided on the 43A–1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Shipboard Non-Tactical Automated Data Processing Program (Snap I).

Discussion: The out year program and dollar estimates provided on the 43A–1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Shipboard Non-Tactical Automated Data Processing Program (Snap II).

Discussion: The out year program and dollar estimates provided on the 43A–1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: Not applicable.

System Name: Standard Automated Financial System.

Discussion: The out year program and dollar estimates provided on the 43A–1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: Subsequent to the submission of the FY 1986 Congressional Budget, renegotiations with the contractor resulted in a stretch out of the STAFS schedule which moved hardware, related off-the-shelf software procurements, and development costs from FY 1985 to FY 1986. Other increases are due to the identification of on-going operational systems maintenance costs not previously definitized. Navy Industrial Fund.

System Name: Navy Standard Civilian Payroll System.

Discussion: The out year program and dollar estimates provided on the 43A–1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986–FY 1990).

Reason for Difference of 30% or More: The increase in O&MN funding is due to schedule changes in system design, development, and implementation for Phases I and II. The OPN increase is caused by realignment of costs resulting from schedule changes.

Defense Logistic Agency (DLA) answer.

System Name: Mechanization of Contract Administration Services.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Difference not equal to 30%. Current lower overall costs reflect latest estimate of the buyout program.

System Name: Standard Automated Materiel Management System.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are used only for initial plannign purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Difference not equal to 30%. Current lower overall costs reflect latest impact of the buyout program.

System Name: Activity Support, Defense Integrated Data System, Mechanization of Contract Administration Services, Logistic System Modernization Program, DLA Standard Warehousing and Shipping Automated System, Baseline Program.

Discussion: The out year program and dollar estimates provided on the 43A-1 are tentative and are sued only for initial planning purposes. Consequently, since they have not been approved, we can only comment in general on proposed changes between the FY 1986 budget and the FY 1987 budget for a common time period (FY 1986-FY 1990).

Reason for Difference of 30% or More: Not Applicable. Not submitted prior year.

Question. For those Services and Agencies whose six year funding exhibit 43A exceeds $200 million, compare for the record the fiscal year 1986, 1987, and total six year funding profile for each exhibit 43B entry in the current budget to the data in the fiscal year 1986 budget. Explain significant differences in each funding category, and highlight upgrades and/or initiatives.

Answer. The collection of information to develop the 43B exhibit (1) does not include the narrative information needed to respond to this question, and (2) the data for the out year program and dollar estimates are used only for initial planning purposes until approved by the Secretary.

The criteria for this exhibit established by OMB Circular A-11 do not require any analysis between fiscal years nor do they require separate break out into categories. The exhibit 43B's submitted by the Department of Defense Components are compiled with all Federal agency acquisitions for publication in OMB/GSA's

Five—year Plan for meeting the automatic data processing and telecommunications needs of the Federal government.

The significant differences in the major automated data processing systems were addressed, however, in the comparisons provided in response to the previous question and would hold true for the 43B entries for those systems.

Question. Mr. Springett, do you plan to comply with this requirement in the fiscal year 1988 budget to Congress?

The Committee's 1986 report requires DoD to include in its budget request exhibit 43-A-1 for each systems whose total estimated life cycle is estimated to be $25 million or greater.

Answer. DoD policy issuance, DoD Directive 7920.1, "Life Cycle Management of Automated Information Systems (AIS)" establishes criteria for designating AIS's as a major system. The criteria are based on cost but not life cycle. If an AIS has anticipated costs in excess of $100 million during the time span from the mission analysis/project initiation phase through the extension and installation of the developed AIS to all operating sites; or the AIS has estimated costs in excess of $25 million in any single year, it is identified as a major AIS. On occasion, there have been systems specially identified "as major" for OSD visibility.

The 43A-1, Major System Cost, exhibit is based on the criteria for a major system identified in DoDD 7920.1.

The Department believes that the cost levels in DoDD 7920.1 are more appropriate to AIS's than the use of the term "Life Cycle Cost". The Department does not agree with the lowering of an AIS dollar threshold to $25M during the time span from the mission analysis/project initiation phase through the extension and installation of the developed AIS to all operating sites. The dollar threshold was established to control the number of systems classified as major which OSD could reasonably expect to manage under DoDD 7920.1.

Question. Approximately how many additional exhibit 43-A-1 exhibits would be involved?

Answer. Currently, there are over 50 exhibit 43A-1's in the FY 1987 budget. We expect that number to increase by about 16 AIS's in the FY 1988 budget as DoD did not have enough time to add all major AIS's including those which were part of composite 43A-1's being reported to OSD. Should the dollar threshold during the time span from the mission analysis/project initiation phase through the extension and installation of the developed AIS to all operating sites be lowered to $25M, the number of systems would not be manageable.

Question. The Committee's 1986 report requires 43A-1 exhibits to indicate for a given system coverage under Warner amendment, estimated life cycle cost, explanation of changes in life cycle cost from the previous budget, management oversight review dates, and milestone status.

Mr. Springett, do you plan to comply with this requirement in the fiscal year 1988 budget to Congress?

Answer. Many items have already been complied with in FY 1987 to show a "good faith" effort. There are over 50 new exhibit 43A-1's in the FY 1987 budget. All Warner amendment systems were labeled. Management oversight review dates and milestone status for each major AIS are contained in the new exhibit 43C's and are not repeated on the 43A-1. Accompanying each DoD Component 43A, of which there were 23, was a summary narrative explanation of major changes from the FY 1986 budget.

The Department believes that the cost levels in DoD policy issuance, DoD Directive 7920.1, "Life Cycle Management of Automated Information Systems (AIS)" are more appropriate to AIS's than the use of the term "Life Cycle Cost". DoDD 7920.1 establishes criteria for designating AIS's as a major system. The criteria are based on cost but not life cycle. If an AIS has anticipated costs in excess of $100 million during the time span from the mission analysis/project initiation phase through the extension and installation of the developed AIS to all operating sites, or the AIS has estimated costs in excess of $25 million in any single year, it is identified as major AIS. On occasion, there have been systems specially identified "as major" for OSD visibility and required to complete an exhibit 43A-1.

There are no other changes planned for FY 1988 budget; only a refinement of the new exhibits and information provided in FY 1987.

Question. Can the current exhibit 43 series be adapted to accommodate this information?

Answer. Yes, we have added two new exhibits and other requested information to the FY 1987 exhibit 43 series. There are no other changes planned for FY 1988 budget, only a refinement of the new exhibits and information provided in FY 1987.

In addition, it should be noted that summary exhibits 43A and B conform to the basic requirements of the Office of Management and Budget. The exhibit 43A was designed for the purpose of collecting cost estimates of Information Technology plans across DoD Component programs. The 43B was designed to provide OMB acquisition data for publication rather than for justification or management purposes. The Office of the Secretary of Defense does not rely solely on the Exhibits 43A and B during budget review. Additionally, information and estimates on the various systems are provided throughout the individual appropriation account justifications. Backup budget material is required from all the Services and Agencies in support of their budget estimates.

[CLERK'S NOTE.—End of questions submitted by Mr. Chappell.]

BLANK PAGE

THURSDAY, APRIL 10, 1986.

MANAGEMENT OF AUTOMATIC DATA PROCESSING SYSTEMS

WITNESS

HON. RICHARD E. CARVER, ASSISTANT SECRETARY OF THE AIR FORCE FOR FINANCIAL MANAGEMENT

INTRODUCTION

Mr. CHAPPELL. Let me call Mr. Carver at this moment. He is the Air Force Assistant Secretary for Financial Management. We are pleased to have you with us, Mr. Secretary. I understand you have a statement on the initiative related to a study by the National Academy of Sciences. Is that correct?

Mr. CARVER. Yes, sir, Mr. Chairman.

I have submitted testimony for the record and it sets out——

Mr. CHAPPELL. It will be received at this point in the record, Mr. Secretary.

[The statement of Mr. Carver follows:]

STATEMENT BY THE ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT)

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I appreciate the opportunity to come before your Committee today to discuss what is in fact one of the most important initiatives recently undertaken by the United States Air Force. It has become quite evident during the past few years with not only the growth in available resources, but the expanded complexities of managing such a large organization, that we must of necessity, maximize the use of state-of-the-art ADP as a management tool. It is only through this process that we can achieve the efficiencies that the Air Force, the Administration, the United States Congress, and the American taxpayers demand.

As you will note from my testimony last year, I indicated that although the U.S. Air Force had a number of initiatives moving forward to technologically expand our use of modern state-of-the-art ADP, we still lacked a comprehensive plan to be used as a basic guideline for this effort. I also mention that our development of this type of road map would make us somewhat unusual as compared to other government agencies.

I am pleased to say that we have been able to achieve essentially what I described in my testimony of May 1985 through an extraordinary commitment on the part of the National Academy of Sciences, as well as the military and civilian leadership of the U.S. Air Force.

I have with me, for your information, copies of the interim report of the National Academy of Sciences, as well as specific issues raised by Mr. Andrew Bilinski, Deputy Assistant Secretary of the Air Force for Information Systems Management. The major recommendations are:

NATIONAL ACADEMY OF SCIENCES RECOMMENDATIONS

- ADP needs to be treated and employed in the same manner as a weapon system.
- This approach suggests the creation of a systems program office for the entirety of base level automation which should be reorganized in a totally integrated manner.
- In today's circumstances, and particularly into the future, we will be unable to sustain resources in a wartime environment without the use of advanced ADP
- We must prepare an implementation enhancement plan for our Phase IV system, a draft of which will be available on 1 June 1986
- We must specify a standard base level automation configuration managed by a single program office and properly baselined which will act as the foundation for all base level ADP activities.

- We will have completed by Fall 1986 a strategic plan for the use of ADP in logistics which will reexamine ADP at all levels of activity in order to develop an integrated seamless system between our operating bases and the Air Force Logistics Command.

MR. BILINSKI'S RECOMMENDATIONS

- We must expand the use of ADPE requirements contracts. We have to be able to make significant savings (estimated at $368 million) in the use of such contracts for our smaller pieces of equipment, and it is clear that such an approach could be quite helpful in all areas.

- The use of Fourth generation languages can considerably improve the implementation of software modernization. With the growing cost of maintenance as well as the development of software, this clearly should be a high payback area.

- We must review and adopt modern management procedures for our large scale computer centers.

- We must expand the use of our advanced concepts base, Mather AFB, CA, as a test bed for the prototyping of our new systems as well as examining our requirements contract products. This will allow us to validate new technology as well as rapid prototyping.

The Air Force has formed a General Officer Steering Group to provide oversight for the examination of these recommendations and the development of the final plan for implementation. At this point, there is general consensus that the basic recommendations are good and need to be developed. By the close of 1986 we should have completed the totality of our implementation plan, recognizing that many elements are either currently being accomplished or will be implemented as the recommendations are refined.

The important overriding issue is the incredible opportunity provided through the use of a fully integrated approach in the utilization of modern, state-of-the-art ADP to achieve significantly increased levels of efficiency and effectiveness in the managing of our limited resources.

DEPARTMENT OF THE AIR FORCE
WASHINGTON, D.C. 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

3 JAN 1986

MEMORANDUM FOR THE HON. RICHARD E. CARVER, ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT)

SUBJECT: Air Force Automation Recommendations

Request that the attached recommendations be included with the National Academy of Sciences report that you will be sending to the Air Staff for staffing and coordination.

During the past six months, my initial Air Force briefings and site visits, as well as our interface with the National Academy of Sciences Committee on Air Force Base Level Automation have identified several ADP technical areas that could be significantly enhanced. The attached pages include observations and specific recommendations for the following:

- The Air Force can strengthen the base-level technical systems architecture and concurrently achieve significant savings with a broadened use of standard ADPE requirements contracts.
- The use of 4th generation languages can significantly provide a cost effective means to Air Force software modernization.
- Modernization of technical and management procedures within Air Force large scale computer centers presents significant cost saving opportunities.
- The Air Force can significantly reduce our large computer center procurement costs, acquisition time frames, and related manpower expended by the use of a competitive requirements contract for mainframe computers, system upgrades, and peripheral equipment.
- Expansion of the Air Force Advanced Concepts Base Program represents a low risk, cost effective method of the rapid prototyping of new technology.

These recommendations, after Air Force review, staffing, consideration and subsequent implementation will have significant cost effective and technical benefits to the Air Force mission.

Andrew E Bilinski

ANDREW E. BILINSKI
Deputy Assistant Secretary
(Information Systems Management)

RECOMMENDATION: The Air Force can strengthen the base-level technical systems architecture and concurrently achieve significant savings with a broadened use of standard ADPE requirements contracts

The Air Force has had tremendous success with its standard microcomputer and standard Tempest microcomputer requirements contracts. The Air Force's follow-on competition for the standard microcomputer requirements contract also has the enthusiastic participation of the Navy, Army and Defense Logistics Agency, and most recently from OASD(C). The Navy's program for a standard portable microcomputer requirements contract, in which the Air Force is a participant, has the potential to be a very successful program. The Air Force/Navy program for the competition of a standard multi-user system requirements contract will satisfy a broad range of user needs. The Air Force Multi-User System (AMMUS) and the Air Staff Office Automation System (ASOAS) programs will address hardware needs of the Air Force with respect to minicomputer applications.

The Air Force microcomputer requirements contracts have been successful because of several factors. The technical specifications were extremely well defined as a result of top management support, outstanding technical staff efforts and unique contract line item definition. The prices obtained from the vendor, because of the very high volumes, were very competitive. Finally delivery periods of 30 to 60 days were an attractive feature of these contracts. The contracts currently in process such as AMMUS, ASOAS and the multi-user system will broaden the spectrum of available hardware to the Air Force user community. However, there exists several areas that require additional consideration and opportunity.

These programs are each individually managed, technically specified and procured. In addition, there is no single technical focal point for users to obtain information or comparative technical analysis. Further the Air Force has no central focal point concerned with connectivity or communications issues to Phase IV equipment. Finally, there exists the opportunity to seriously evaluate these individual systems in relation to the Air Force Technical Systems Architecture.

The Air Force should seriously consider the establishment of a standard office to centrally manage, procure, and evaluate all standard requirements contracts within the Air Force.

In summary, I request that the Air Force staff this topic to consider, review, and recommend an approach to the following:

- A central focal point for policy, definition, specification and procurement of Air Force requirements contract ADPE.
- A central focal point for technical matters related to Air Force ADPE requirement contracts, including connectivity, communications and compatibility.
- An evaluation of expanding the level of detail in the Air Force Technical Systems Architecture to include ADPE provided from standard requirements contracts.

Request an initial response to this initiative within 60 days.

RECOMMENDATION: The use of 4th generation languages can significantly provide a cost effective means to Air Force software modernization

The cost of developing and maintaining software for information systems within the Air Force continues to increase each year at an aggressive pace. OSD projects that software development and maintenance costs will increase by 22% over the next several years. Also, the amount of time involved in specifying, designing, coding and testing of new systems and maintaining existing systems, in many cases, endangers the overall Air Force readiness and general effectiveness of information systems. The Air Force FY 87 budget estimate for Information Technology Systems is almost $3 billion - much of this will be for personnel and contractor support in development and maintenance of information system software. In order to increase the effectiveness of each dollar spent on software, it is necessary to improve and enhance the technologies we use in systems development and software maintenance.

The use of 4th generation programming languages offers one technology that should be seriously evaluated and considered by the Air Force. Industry experts assert that 4th generation programming languages offer efficiencies between 5 and 40 times the efficiencies obtained using conventional software development methodologies. These experts have estimated that the development costs for a single line of code written in ADA range from $450 to $750. The General Services Administration has reported that the government development costs for a single line of code using COBOL is $75. General Electric Company has evaluated 4th generation languages and assumes an efficiency of 10 as compared to COBOL, i.e., $7.50 per line of code. There appear to be significant, potential benefits in exploring an expanded use of 4th generation languages within the Air Force.

The Air Force currently has several initiatives that are concerned with 4th generation programming languages. The CHCS initiative under the Foreign Military Sales program has awarded a competitive contract using this concept. The initiative to develop a Centralized Civilian Pay system is exploring similar acquisition strategies. The 1st Information Systems Group has done extensive evaluations of this technology.

Request that this topic be staffed so that the benefits, technical approaches, risks and subsequent Air Force policy and guidance can be determined. Request an initial response to this potentially cost effective methodology of software development be addressed within 60 days.

RECOMMENDATION: Modernization of technical and management procedures within Air Force large scale computer centers presents significant cost saving opportunities

During my first 90 days with the Air Force, I had the opportunity to make extensive site visits in order to enhance my initial Air Force orientation. In many cases, my site visits included tours of Air Force large scale computer centers.

These computer centers, in some cases, occupied entire buildings, were operational 7 days per week 24 hours per day, employed hundreds of people, supported up to 20 different vendor lines of equipment, contained thousands of magnetic tapes, contained billions of characters of on-line data, supported hundreds of users, and accordingly, had annual budgets in the millions of dollars. Another striking observation was that no two Air Force computer centers that I visited looked alike, were managed alike, nor performed alike. Further, it was also apparent that the individual annual costs of operating and maintaining these large computer centers were not directly proportional to any consistent effectiveness factor.

Each of the computer centers I visited was able to demonstrate several individual areas where they had improved their effectiveness. Some had done extensive contracting out for support services. Many had a centralized tape management system. Some had physically consolidated similar make vendor equipment in clusters in order to increase personnel effectiveness, etc. The effectiveness and efficiencies of the Air Force Communications Command's 1st and 2nd Information Systems Groups are especially noted. However, all of these effectiveness improvement initiatives were a result of local management decisions, rather than compliance to a broader computer center management policy.

Request that this topic be staffed so that the operational efficiencies currently in place in individual data centers become consolidated as part of overall broad Air Force policy concerning large scale computer center management. Suggest that you explore efficiencies currently in use by private industry as well. Suggest coordination with the Air Force Audit Agency which will be performing several audits in this area. Request an initial response to this initiative within 60 days.

RECOMMENDATION: The Air Force can significantly reduce large computer center procurement costs, acquisition time frames, and related manpower by the use of a competitive requirements contract for mainframe computers, system upgrades, and peripheral equipment.

The significant successes of the Air Force's existing standard requirements type contracts for micro and minicomputer applications could be repeated in the area of large mainframe computers, software, and peripherals for our large computer centers.

The concept of a standard requirements contract could have benefit to the Air Force in the area of mainframe computer equipment currently in use in many of our large computer centers. Large Air Force computer centers like AFLC, AFMPC, AFAFC, and others have mainframe computer environments that frequently and routinely modify, upgrade, and/or replace major components, software, and peripherals. This activity results in hundreds of individual procurements consuming thousands of manhours annually. Additionally, the numerous individual procurements, because of the low dollar value, do not usually result in the largest price discounts that are normally found in larger buys.

Suggest that the Air Force evaluate procurement history over the past two years in our large computer centers, as well as review future upgrades, expansions, and mainframe computing replacement plans. The Air Force should seriously evaluate the concept of such a requirement type contract for mainframe computers, major components, software, and peripherals.

Request an initial response to this initiative within the next 60 days.

RECOMMENDATION: Expansion of the Air Force Advanced Concepts Base Program represents a low risk, cost effective method of the rapid prototyping of new technology.

The purpose of this memorandum is to formally applaud the efforts and results of the Air Force Advanced Concepts Base program to date, and to offer some observations and suggestions for future implementation.

I visited the Advanced Concepts Base at Mather AFB in September 1985 and received extensive briefings related to the overall program, initiatives and future plans. I have also closely monitored activities, progress and problems since my visit.

The objectives of the Advanced Concepts Base Program which was started at Mather AFB in March 1984 are to validate new technologies in an operational environment, build the foundation for a modern base information systems, improve systems support for end users, to demonstrate timely methods for system acquisitions, and to provide an environment for prototyping by functional users. During the last nine months, progress in all of these areas has been achieved. Projects include a base-wide local area network, civil engineering and communication squadron engineering drawing system, base information services, production graphics system, electronic warfare computer learning center, and end user microcomputer initiatives. In addition to extremely strong support from the ATC and SAC wing commanders, the comptroller community also supports the Comptroller Office of the Future (COOF) and works closely with the Advanced Concepts Base staff. The excellent results achieved to date are, in part, a result of strong management involvement on behalf of the functional users. We believe this functional user support and leadership is essential to preserving the existing program and enhancing future initiatives.

The Air Force Advanced Concepts Base Program should be strengthened in order to capitalize on the significant accomplishments achieved to date. The Advanced Concepts team at Mather AFB consists solely of part-time staff on loan from the functional areas. There is not currently any ADP oriented technical support staff available on-site to support the Mather Advanced Concepts Program Manager. Funding amounts have been meager and not available until nearly the end of FY 85. We believe the Advanced Concepts program to be good for the Air Force and would be made better by additional staff, on-site technical support, increased funding and a higher exposure within the Air Force. We understand that the Air Force contemplates adding Moody AFB to the Advanced Concepts program. We are in agreement with this plan as long as it broadens the program and does not serve to dilute the already scarce resources.

The Advanced Concepts Base at Mather, given adequate on-site technical support should be a formal acceptance test site for all Air Force Standard Requirements Contract ADPE including programs such as AMMUS, ASOAS, multi-user, portable microcomputer, and the existing microcomputer contracts, or a manager for projects that are more efficient when sited elsewhere. The Advanced Concepts Base should be the prototyping site for appropriate new software releases from the AFCC Data Systems Design Office (DSDO). The Advanced Concepts Base should also work closely with the AFCC Advanced Technology group as well as the AF/SI Directorate of Architecture and Technology (SIT) group.

It is also important to evaluate the process by which we implement successful Advanced Concepts initiatives into Air Force standard systems. Costs and timeframes involved in the system development process are not only a function of the design, programming and testing activities, but also a function of Air Force documentation requirements. Request that the Air Force perform a comprehensive evaluation of all software implementation documentation regulations contained in AFR 700, as we suspect that there are areas that could stand significant documentation reduction without loss of technical quality.

Request that the items addressed above be staffed with the intent of providing the Advanced Concepts Base Program the exposure within the Air Force, and resources to effectively facilitate rapid implementation of validated essential user requirements in a cost effective and timely fashion.

NATIONAL ACADEMY OF SCIENCES REPORT

Mr. **CARVER**. It has observations about the Academy recommendations, but we have included copies of them so the committee would have that available.

I would just like to summarize a couple of points.

A year ago when I came up to testify, I said in my judgment the only way to handle general-purpose ADP was to attempt to put your arms around the entire process to make sure you are properly integrating the systems and using them as an effective management tool because through that means we can really save a lot of money and manage more effectively.

I indicated at that time we were hiring the National Academy of Sciences together with some other organizations to take that kind of a look and create for the Air Force a comprehensive plan for use of ADP. The points that came out of those recommendations as well as others generated by my Deputy Assistant Secretary, Mr. Andrew E. Bilinski, are as follows:

First, the Academy recommends that the ADP systems need to be treated and employed in the same manner as a weapon system; that this approach suggests the creation of a systems program office for the entirety of base level automation which should be reorganized in a totally integrated manner.

In today's circumstances, and particularly into the future, we will be unable to sustain resources in a wartime environment without the use of advanced ADP.

We indicated we needed a horizontal plan of integration so whatever happened in base supply could be coordinated with what was happening in our comptroller's shop who ultimately had to pay the bill for it, as a result of doing all this we were able to achieve a comprehensive plan and the ability to not only use a standard-type system, but to truly achieve some management breakthroughs and to do it where we have been able to provide a true implementation plan so we could do it as effectively as possible.

Mr. Chairman, Mr. Bilinski also recommended in conjunction with that, as pointed out by Mr. Springett, the expanded use of ADPE requirement contracts. We have saved 60, 65, 70 percent on a small computer. We can do the same with a large main frame.

The result is that we can use competition at every level of hardware for ADP.

Beyond that, there is now a new language, a fourth generation technology language, that gives us a ten-to-one increase in the effectiveness of the language or a 10-percent cost of what it used to be to use those kinds of computer languages. As we know, software is one of the big costs.

Beyond that, in closing, we are developing, in conjunction with all this, the kind of ability that will allow us to field the system, test it and put it out for the whole Air Force to use. We have what we describe as an advanced concept base at Mather Air Force Base in California, where we have the opportunity to use any system we might want to put out in the world and test it there in a real working environment before putting it out for the rest of the Air Force to use.

Let me take that a step further. About three or four days ago, the Tactical Air Command was examined for their use of minicomputers in order to accelerate the production of labels for pharmaceuticals. In that context, they had on their own developed a plan for solving that kind of problem even in the face of the fact that those particular computers are managed by OSD, not us.

Nevertheless, OSD took a look at what we are doing. We said we would use our prototyping concept, in effect our advanced concept base, but we wouldn't pick it up and take it to Mather. We would use the TAC as the testbed because that is where it is being used in order to develop a prototype to go Air Force-wide.

In coming weeks, we will send more hardware out and put that in every hospital on every base in the Tactical Air Command so we can be sure we are coming up with the right solution, and it will be the Air Force solution. That is how you avoid having one solution in one place, another solution in another place, and not only no opportunity for competition but no opportunity for real effective use of ADP as a management tool.

To the best of my knowledge, in all the acquisitions we have, no matter how hard we try, what we are really talking about is more technology, getting more for the same money, or whatever else it might be in terms of getting a better and more effective use of our resources.

ADP is the only thing you get a dollar return on. Where you can go out and cut the cost of doing something and cut it significantly either in dollars or personnel.

Last year I said we would develop this comprehensive strategic plan. To my knowledge, no other department of government has attempted to do what we are doing.

We are at least 65 percent of the way towards having a true implementation plan and as a result of the National Academy of Sciences work and our own work combined with the general officer steering committee working in the Air Force at the Pentagon now, we know the basic outline of what it is we are doing.

If I come back a year from now, we will be able to not only show you our planned implementation, but be able to demonstrate across the Air Force how we have used it and used it effectively.

In these times of limited resources, it is my personal judgment that this is one of the things we have to do if we are going to really provide for the defense of the country.

Savings Through Use of ADP

Mr. Chappell. What kind of savings are we talking about here?

Mr. Carver. We are on our way. It could be in the tens or hundreds of millions of dollars.

If you are managing, as we do in the Air Force Logistics Command, $85 billion worth of inventory, and you can do it much more effectively because the systems that we are putting in place today will allow us to take a reading of a single aircraft and forecast what its future parts needs will be. Then we will be able to do that for the entire system, all of the F-16s or all the B-1s for instance, and we can go out and buy based on our forecasts and send to that particular base their requirements in advance of the failure, if you begin to quantify those savings they add up very rapidly into very big dollars.

Then, if you back away and take the reverse of that, you don't have to buy a lot of things that you ultimately don't find you need, because you were never able to measure requirements accurately. This gives you the opportunity to avoid buying those things as well.

So in that particular arena, and I could move into others, the chances for real hard dollar savings in very big dollars is extremely good.

I think today we could virtually assure you the systems, for instance in logistics we have ten separate initiatives, those systems will deliver those kinds of savings and there are many other areas where we are doing the same thing.

Mr. **Chappell.** Mr. Secretary, thank you very much.

Mr. **Carver.** Thank you.

Mr. **Chappell.** Those are encouraging words and we encourage you to just stay with it.

Mr. McDade.

Mr. **McDade.** Mr. Chairman, let me offer my encouragement as well.

It is a very interesting statement. We look forward to watching your progress, the savings and better control of inventory, et cetera. Keep up the good work.

Thank you, Mr. Chairman.

Mr. **Chappell.** You have computerized us around Gramm-Rudman-Hollings maybe.

Mr. **Carver.** Thank you, Mr. Chairman.

Mr. **Chappell.** Thank you very much.

The committee will stand adjourned until 1:30 on Monday next.

WITNESSES

	Page
Ailes, Rear Adm. R. H	61
Arthur, Rear Adm. S. R	1
Blot, Col. H. W	1
Buehler, Capt. R. R	1
Carver, R. E	827
Comstock, E. T	233
Garant, R. G	233
Hill, Rear Adm. V. L	421
Hogg, Vice Adm. J. R	421
Hostettler, Rear Adm. S. J	61
Hughes, Ms. H. S	1
Keane, John	421
Malley, Rear Adm. K. C	61
Marshall, Capt. B. C	1
Martin, Vice Adm. E. H	1
McKee, Adm. K. R	437
Metcalf, Vice Adm. Joseph, III	279
Pyatt, Everett	279
Rowden, Vice Adm. W. H	279
Smith, Lt. Gen. K. A	1
Smith, Rear Adm. W. D	1, 61
Springett, John	465
Went, Lt. Gen. J. J	233
Wilkinson, Vice Adm. J. B	1
Wolkensdorfer, Rear Adm. D. J	421

INDEX

MANAGEMENT OF AUTOMATIC DATA PROCESSING (ADP) SYSTEMS

Page

- ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT) 827
  - Introduction 827
  - National Academy of Sciences Report 838
  - Savings Through Use of ADP 839
  - Statement of Assistant Secretary of the Air Force (Financial Management) Richard E. Carver 828
- OFFICE OF SECRETARY OF DEFENSE (COMPTROLLER):
  - ADA Language 594
  - ADP Equipment Management Fund 597
  - ADP Program Managers 598
  - Air Force:
    - ASAT ADP 585
    - General ADP Issues 664
    - Logistics Command Modernization 687
      - Contracting Issues 709
      - Data Accuracy 699
      - Fragmentation of System 696
      - Independent Assistance 701
      - Interim ADP Projects 698
      - Life Cycle Procedures 700
      - Project Management Approach 703
      - Requirements Data Bank 691, 712
      - SAF/FM Initiatives 706
      - Stock Control and Distribution Project 691, 710
    - Medical ADP 668
    - National Academy of Sciences Study 584
    - SAC War Planning 670
  - Army:
    - ADP Systems 565
    - Commodity Command Standard System (CCSS) 769
    - Forces Command Interim Automation 763
    - General ADP Issues 658
    - Integrated Procurement System (IPS) 772
    - Low Rate of Competition 479
    - Project 80-X 768
    - Standard Depot System (SDS) 774
    - Strategy Conference 783
    - Supercomputers 578
    - Tactical Army Combat Computer System 574
    - Test and Evaluation Analysis Management Uniformity Plan (TEAMUP) 775
    - Theater Army Medical Management Information System (TAMMIS) 780

OFFICE OF SECRETARY OF DEFENSE (COMPTROLLER)—Continued

Army—Continued

Page
Unit Level Computers 577
Vertical Force Development Management Information System (VFDMIS) 777

Budget Data 815
Central Design Activities 650
Competition 478, 538
Computer Policy and Oversight 477, 533
Computer Security 602
Continental Army Management Information System (CAMIS) 570, 785
Ad Hoc Steering Group 798
Architecture Interface 809
Army Testimony 806
Charter 786
Chronology 812
Continuity of CAMIS Program Management 792
Demonstration of CAMIS Validation System 795
Dual Tasking 801
Headquarters Army Management 804
Improved Management 807
ISP-CAMIS 802
Judge Advocate Review 797
Open Issues 814
Program 790
Sole Source Contracting 796
DLA General ADP Issues 675
DoD ADP Report to Congress 481
Foreign Military Sales Financial Management Improvement (FFMIP) 683
Logistics Modernization 548
MAISRC Process 625
Management Oversight by DoD Components 478

Navy:

Bases and Stations Information System (BASIS) 754
General ADP Issues, Marine Corps 671
General ADP Issues, Navy 660
Naval Air Logistics Command Management Information System (NALCOMIS) 746
Naval Occupational Health Information Management System (NOHIMS) 663
Personnel and Pay Center Consolidation (PERSPAY) 724
Shipyard/Ordnance Eclectic Systems (SHORES) 760
Standard Automated Financial System (STAFS) 761
Stock Point ADP Replacement 732
Trident Logistics Data System 582
Uniform Inventory Control Point Redesign 730
Opening Statement of Mr. Springett 466
OSD Policy Oversight 533
OSD Response to Committee Recommendations 480
OSD Review Process 537
Pentagon Automation 479, 540
Requirements Contracts 642
Software Obsolescence 638
Strategic Planning 536, 635

OFFICE OF SECRETARY OF DEFENSE (COMPTROLLER)—Continued Page

- Technical Data 586
- Tri-Service Medical Information Systems (TRIMIS) 679
- Uneconomical Leasing of Other Than ADP Equipment 611
  - Buyout of Uneconomical Leases 612
  - Capital Budget 624
  - Compliance with Federal Acquisition Regulations 615
  - Expense/Investment Criteria 613
  - Lack of Procurement Funds 615
  - Leasing Telephone Sets 619
  - Opening Remarks 612
  - Reporting of Equipment Leases 613
  - Telephone System Replacement 623

MARINE CORPS PROCUREMENT

- AAV7-A1 Product Improvement 269
- Armored Bulldozers 275
- Bridges 277
- Light Armored Vehicle—Air Defense 261
- Mortars 259
- Opening Statement 233
- Principle End Items/Secondary Items 263
- Procurement/Operation and Maintenance Balance 257
- Readiness 257
- Seafire, Cancellation of 259
- Squad Automatic Weapon 263
- Statement of LGen Went 234
- Tactical Vehicles 271
- Tanks 258
- Unit Level Circuit Switch 264

NAVY AIRCRAFT PROCUREMENT

- A-6 Aircraft 42
- A-6 and F-14 Upgrade 40, 44, 48
- Air Carrier Airwings, Performance of 38
- Aircraft Procurement Program 38
- Anti-Submarine Warfare (ASW) Helicopters 49
- Attrition Aircraft, requirements for 58
- CH-53 Multiyear Procurement 51
- Combat Search and Rescue Helicopters 52
- Congressional Direction on P-3C Aircraft 28
- Congressional Direction on F-16 Aircraft 46
- Direct Manufacturing Manhours 47
- E-6A TACAMO:
  - Contract 32
  - Mission 32
- F/A-18 Competition 53
- F-14D Aircraft 43
- Flying Hour Program 35, 37, 59
- Gramm-Rudman-Hollings, Effect of 36
- Introduction 1
- Maintenance Pipeline Aircraft 57
- Modification of Aircraft 54
- Night Attack Programs 33

Page
Requirements for Attrition Aircraft 58
SH-2F vs. SH-60B Helicopter 29
Spare Engine Requirements 59
Statement of VADM Martin 4
Statement of LGEN Smith 14
Summary Statement of Admiral Martin 22
  Aircraft Request 23
  Carrier Battle Group 23
  Maritime Strategy 22
  Naval Aviation 22
  Pillars of Effectiveness 24
  Reserve Forces 23
Summary Statement of General Smith 26
  Marine Corps Aviation 26
  V-22 27
T-45 Trainer Aircraft 45, 56
Tanker Conversion Program 56
Training Aircraft 39
V-22 Osprey:
  Affordability 30
  Engine Design 31
  Fixed Price Contract 31
  Full-Scale development 30
  Priority 32
  With ASW Follow-On Mission 31

NAVY ANTISUBMARINE WARFARE PROGRAMS

Active Sonar 423
Allied Contribution 431
Arctic Research 432
Captor Upgrade 427
Classification of Submarines 425
CNO Policy Statement 429
CNO Urgent ASW Research Program (CUARP) 429
FASTMATT Target 434
Funding Trends 435
Gramm-Rudman-Hollings Impact 426
Inshore ASW 434
Introductory Remarks 421
Management of ASW Test Resources 433
Market. the ASW 436
Master Plan and Investment Strategy 429
Mining Capability 428
Non-Acoustic ASW 425, 432
Opening Remarks of Admiral Hogg 422
Payoff from U.S. ASW Investment 431
Priorities 424, 431
Sea Lance Payloads 433
Soviet Deployment of Submarines 425, 427
Soviet Espionage 426
Soviet Progress 423
Soviet Submarine Shipbuilding Force Level Trends 435
Soviet Threat 422
Strategy, Changes in 423

645

Page
Tactics 426
Technical Difficulties 435
Torpedo Programs 424
U.S. Lead in Submarine Detection Capability 429
U.S./NATO Inventory 427
Wargame Results 431

NAVY SUBMARINE/NUCLEAR REACTOR NEEDS

Acquisition Strategy 461
Comparative Costs: SSN-688 and SSN-21 454
Defense Budget for Submarines 442
Diesel Submarines 461
Gramm-Rudman-Hollings Impact 458
Introductory Remarks 437
Libyan Operation, Use of Submarines 455
NATO/Soviet Capabilities 453
Nuclear Trained Officer Availability 454
Opening Statement of Admiral McKee 437
Operational Systems RDT&E 444
Overhauls 444
Reactor Service Life Extension Program 455
SALT II and Potential for SSBN Training Ship 456
SALT II Limitations on SSBN Deployment 458
Soviet Advances in Submarine Technology 457
SSBN Training Ship Conversion 438
SSN-21 Attack Submarine 445
  Affordability 456, 459
  Combat System Development 459
  Development of the SSN-21 447
  Quieting Technology 445
  Reactor Development 460
  Technical Goals 446
  Trends in Submarine Development 446
Statement of Admiral McKee 449
Submarine Characteristics 440
Submarine Manning 444
Submarine Missions 439
Submarine Production Capability 453
Technology Base 462
U.S./Soviet Capabilities 451
Under Ice Capability 456
  AKULA Under Ice Capability 456
  U.S./Soviet Under Ice Capability 457

NAVY SHIPBUILDING AND SHIP REPAIR PROGRAM

AOE Fast Combat Support Ship 401
Competition in Shipbuilding 368
Congressional Direction 330
DDG-51 Destroyer 403
Gramm-Rudman-Hollings 320, 361
Hospital Ships 341
Introduction 279
LCAC—Landing Craft Air Cushion 352, 364
LPD-4 Service Life Extension Program (SLEP) 404

Page

Mariner Fund 354
MCM—Mine Countermeasures Ship 354
Mine Countermeasure Force Study 366
Missile Accuracy 347
MSH—Minesweeper 365, 373, 406
Multiyear Contracts 368
New Orleans Drydock Facility 320
Ocean Research Ship 408

Overhaul and Repair:

    Costs to Overhaul Ships—GAO Report 413
    Decrewing Ships During Overhauls 324
    Defining Ship Maintenance by Nature of Work 414
    Impact of Repair Policy on Shipyard Mobilization Base 341
    Impact of Ship Repair Policy on Navy Crews 320
    Interport Differential 357
    Lowballing on Naval Ship Overhauls 374
    Public Shipyard Funding Reductions 335
    Public/Private Overhaul Competition 334, 412
    Ready Reserve Fleet Dispersal 362
    Repair of U.S. Ships in Canada 360
    RRF Purchases 366
    Ship Maintenance/Modernization Workload 416
    Ship Repair and Maintenance Policy 363
    Ship Repair Bids, Underestimating 349
    Ship Repair Competition 344
    Ship Repair Overseas 368
    Ship Repair Policy and Strategic Homeporting 337
    Ship Repair Work 392
    Trident Submarine, Overhaul of 400
    Underwater Hull Cleaning 367
Service Craft 409
Shock Testing 416
Special Warfare Craft—Medium 338
SQR-17 and SQR-18 Systems 331, 361
SSN-21 Attack Submarine 399, 409
Statement of Secretary Pyatt 282
Statement of VADM Metcalf 285
Strategic Sealift Enhancement 340
Summary Statement of Assistant Secretary Pyatt 279
T-AGOS Ocean Surveillance Ships 221, 333, 351, 410
Trident Submarine 398, 400, 411
Vapor Compression Desalination Plants 366

NAVY WEAPONS PROCUREMENT AND OTHER PROCUREMENT

Congressional Direction 175
Fleet Hospitals 189
Introduction 61

Other Procurement, Navy:

    Airborne Expendable Countermeasures 229
    Aircraft Rearming Equipment 220
    Fleet Moorings 224
    Funding Growth Rates 221
    Minesweeping Cables 227
    MK-92 CORT 177, 194, 195

Other Procurement, Navy—Continued

Page
Overview ... 61
Budget Activities ... 63
Fleet Modernization ... 65
Impact of Congressional Action ... 62
Sustainability ... 65
Quickstrike Mine ... 218
Spares and Repair Parts ... 230
SQQ-89 ... 175, 195
SQR-17 ... 188, 195, 196
Statement of RADM Smith ... 90
Warranties ... 223

Weapons Procurement, Navy:

Missiles:

HARM ... 199
Harpoon ... 202
Laser Maverick ... 205
Phoenix ... 201
Rolling Airframe Missile ... 206
Stinger ... 208
Tomahawk ... 151
All-Up-Round ... 198
Competition ... 180
Manufacturing Discrepancies ... 198
Procurement Costs ... 179
TLAM/D ... 178, 197
Overview ... 116
Dual Source Procurement ... 117
Missiles ... 119
Sole Source vs. Competition ... 117
Summary by Budget Activity ... 116
The Four Pillars ... 116
Torpedoes ... 118
Statement of RADM Ailes ... 127
Statement of RADM Hostettler ... 154

Torpedoes and Other Weapons:

Antisurface Ship Warfare Torpedo ... 190, 212
CAPTOR Mines ... 187
Mark-15 Close-In Weapons Systems (CIWS) ... 217
Mark-46 Torpedo ... 213
Mark-48 ADCAP ... 209
Mark-48 Cost Vice ASUW Torpedo ... 197
Mark-48 Torpedo ... 209
Mark-50 ... 181, 214
Mark-50 vs. Mark-46 ... 182, 197
Sixteen-Inch Guns ... 188
Submarine Launched Mobile Mine ... 193, 196, 216
Vertical Launch ASROC (VLA) ... 185, 216

○

648